REPORT RESUMES

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THE LANGUAGE OF ELEMENTARY SCHOOL CHILDREN--ITS RELATIONSHIP TO THE LANGUAGE OF READING TEXTBOOKS AND THE QUALITY OF READING OF SELECTED CHILDREN.
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INDIANA UNIV., BLOOMINGTON, SCH. OF EDUCATION
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THIS STUDY WAS DESIGNED TO (1) ANALYZE THE ORAL LANGUAGE STRUCTURE OF FIRST- THROUGH SIXTH-GRADE CHILDREN, (2) COMPARE THAT STRUCTURE WITH THE LANGUAGE STRUCTURE IN BOOKS BY WHICH CHILDREN ARE TAUGHT TO READ, AND (3) ASCERTAIN, AT THE SECOND-GRADE LEVEL, THE INFLUENCE OF ANY DETERMINED DIFFERENCES ON THE QUALITY OF READING, READING INTERPRETATION, AND LISTENING SKILLS OF CHILDREN. THE ORAL LANGUAGE OF ALMOST 600 CHILDREN WAS FIRST RECORDED AND THEN ANALYZED FOR SYNTACTIC STRUCTURE. THESE LANGUAGE PATTERNS WERE THEN COMPARED TO THOSE USED IN CERTAIN SETS OF READING TEXTBOOKS AND TO SPECIFIC PREDETERMINED STANDARDS OF READING QUALITY. RESULTS FROM AN ANALYSIS OF THESE DATA SHOWED GREAT FLEXIBILITY IN THE ORAL LANGUAGE PATTERNS USED BY THE SUBJECTS. IT SEEMED SAFE TO CONCLUDE THAT CHILDREN LEARN THE BASIC STRUCTURES OF THEIR LANGUAGE AT AN EARLY AGE. FINDINGS ALSO SHOWED THAT THE ORAL LANGUAGE CHILDREN USE IS FAR MORE ADVANCED THAN THE BOOK LANGUAGE IN WHICH THEY ARE TAUGHT TO READ. FURTHER STUDY WAS RECOMMENDED TO DETERMINE WHETHER OR NOT BOOK LANGUAGE, USED CURRENTLY IN THE ELEMENTARY READING CURRICULUM, SHOULD BE MODIFIED TO THE LEVELS AT WHICH STUDENTS SPEAK. IT WAS ALSO SUGGESTED THAT ADDITIONAL WORK BE DONE IN HELPING CHILDREN TO RECOGNIZE AND UNDERSTAND THE ENTIRE PHONEMIC SCHEME OF ENGLISH SO AS TO TURN THE STIMULUS OF PRINTED SYMBOLS INTO ORAL LANGUAGE PATTERNS FOR BOTH COMPREHENSION AND INTERPRETATION. NO EVIDENCE WAS OBTAINED IN THIS STUDY REGARDING THE RELATIONSHIPS EXISTING BETWEEN A CHILD'S USE OF SPEECH PATTERNS AND THE NUMBER OF GRAMMATICAL ERRORS IN SPEAKING. (JH)

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The Language of Elementary School Children: Its Relationship to the Language of Reading Textbooks and the Quality of Reading of Selected Children

by

RUTH G. STRICKLAND

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THE LANGUAGE OF ELEMENTARY SCHOOL CHILDREN: ITS RELATIONSHIP TO THE LANGUAGE OF READING TEXTBOOKS AND THE QUALITY OF READING OF SELECTED CHILDREN

by

Ruth G. Strickland

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ACKNOWLEDGMENT

Credit for the work which has been done belongs to the project team and to the principals, teachers, and children of the Bloomington Metropolitan School District who cooperated wholeheartedly at every point. The studies conducted at the various grade levels by research assistants are component parts of this research and data are drawn from them for this report.

R.G.S

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Ruth G. Strickland received her B.S. degree in 1925 and her A.M. degree in 1932 from Teachers College, Columbia University, and her Ph.D. degree in 1938 from Columbia University. She taught in kindergarten through grade 6 in Duluth, Minnesota, for five years and then did demonstration teaching and supervision at New York State Teachers College (Geneseo) and Washington State Teachers College (Billingham). She also did demonstration teaching in summer sessions at Wellesley College; Horace Mann School at Teachers College, and Ohio State University. She taught at Temple University from 1932 to 1937, and was Director of Elementary Education at Kansas State Teachers College (Emporia) from 1937 to 1939. She joined the faculty of the School of Education in 1939 and has been Professor of Education there since 1950.

Dr. Strickland served as Senior Specialist in Extended Services in the United States Office of Education in 1943, and as consultant in Japan for the War Department in 1948. She has been a workshop leader and consultant for several universities and school systems, and in 1956 spent four months visiting 40 schools in England.

Dr. Strickland was Book Review Editor for *Childhood Education* in 1951-1953; was chairman of the Research Committee of the Association for Childhood Education International in 1949-1951; was president of the National Conference on Research in English in 1954; and was president of the National Council of Teachers of English in 1960.

Among Dr. Strickland's writings are the following:

The Language and Mental Development of Children, Bulletin of the School of Education, vol. 23, no. 2, Indiana University, Bloomington, March, 1947, 31 pp.

The Language Arts in the Elementary School, D. C. Heath and Company, Boston, Second edition, 1957.

English Is Our Language, Guide for Grades 1 and 2, D. C. Heath and Company, Boston, 1950.

(With others) *Language Arts for Today's Children*, Volume II, Commission of National Council of Teachers of English, 1954.

Numerous articles for the following periodicals:

Bulletin of the School of Education
Childhood Education
Educational Leadership
Elementary English
Journal of Education
The Reading Teacher

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CHAPTER I

THE PURPOSE AND THE PLAN

Children enter school able to use oral language and to respond to it. They have for several years been speaking and listening to the language used in their environment and have been doing so with increasing comprehension and skill. They have learned to communicate their own ideas, emotions, and desires by means of a system of voluntarily produced symbols and to comprehend the meaning expressed by others who use the same system of symbols.

These symbols which the children have learned are oral symbols, and the patterns which constitute the flow of sound called speech are oral patterns. In speaking the English language, one expresses his meaning through various combinations of the basic phonemes or sound units of the language together with certain characteristic patterns of pitch, stress, and juncture, all put together in patterns of syntax. Children have learned these patterns by ear and through experience, and most children have learned to use them freely and easily by the time they enter school. They use the same emphasis, the same rising and falling intonation, the same stops and partial stops, and the same arrangements of word order as do the adults around them. Noel's study confirms the observation of teachers that, by the time a normal child arrives at school age, he has learned to speak whatever sound system, grammar, and vocabulary are characteristic of the kind of language he has heard most frequently at home and in his neighborhood (27).

Since not all children are privileged to grow up in homes where English is well spoken, there are differences in the quality of the usage children bring to school. Because rate of learning as well as degree of auditory perception differs from child to child, there are, in any elementary school class, differences in the maturity which children show in their use of language. The school accepts the responsibility for helping children expand, refine, and adapt their language to serve many functions. It may at times be called upon to help children add to their wardrobe of language an almost totally new dialect if the language they bring to school differs greatly from the informal standard English which they will need to learn to read and write. Of necessity, the school assumes that each child has developed some command of language and builds its program of listening, speaking, reading, and writing on this foundation.

Reading is the first of the three R's children must acquire as the basis for a lifetime of schooling and self-education. Public concern for the rate at which children learn to read and the level of skill they attain is expressed frequently and persistently by many critics of the schools and their programs.

Traditionally, the teaching of reading has been carried on through the use of specially prepared reading textbooks. Reading specialists have given thoughtful and scientific attention to the production of textbooks in which reading skills are developed through experience with a carefully selected and controlled vocabulary. The vocabulary load of basic readers for each grade has been increasingly and consistently lowered and simplified during the last 30 years, even to the point of rewriting literary classics. A tightly controlled vocabulary is vigorously defended by most reading specialists.

Studies of the difficulty of children's readers appear to measure two factors almost exclusively: (a) the number of words used in the book, and (b) the position of those words in standard lists of the most commonly used words in the language. Some attention appears to be given to the length of sentences. There is no evidence that such studies give attention to structure of sentences or to the familiarity of such structure to the readers for whom the material is written. Studies of the readability of books for older children tend to utilize readability formulas which are concerned mainly with word counts, adding only the elements of length of words (or number of polysyllabic words) and number of abstract words (5).

Comments by children, anecdotes related by parents, and the criticism of some educators and laymen all indicate that the reading matter provided for children's early development of reading skill may be unsatisfactory for the building in some children of either skill or interest in reading. Rigid control of vocabulary in many textbooks appears to result in content written in sentences quite different from those used by children in their own spontaneous talk. Whether there are major differences between the language used by children and the language of the books in which they are taught to read is a matter which has long needed further investigation. It appears possible that reading matter couched in sentences such as children themselves use might make learning to read both easier and more satisfying. Little is known of the patterns of syntax used by children at different age, grade, intelligence, and socio-economic levels, and there are no studies which deal with the patterns of syntax found in children's readers.

Purpose of the Investigation

This study was designed to analyze the structure of children's language in the first through the sixth grade, to compare it with the structure of the language in the books in which children are taught to read, and to ascertain, at a selected grade level, the influence of any apparent differences on the quality of children's reading skill.

The questions the research was designed to answer were the following:

1. What patterns of structure appear in the oral language used

by children in the six grades of the elementary school?

2. What patterns of subordination and elaboration can be isolated and described through linguistic analysis?

3. To what extent are these patterns of structure found in the language of children at each of the six grade levels related to the variables of age, sex, and intelligence of the children and the socio-economic background and education of the parents?

4. Are the patterns which children use at these grade levels found in the reading textbooks designed for these grades?

5. What relationships appear at sixth grade level between the structure of children's oral language and their silent reading comprehension, oral reading interpretation, and listening comprehension?

Theory Basic to This Study

The material which one reads is composed of words set forth in certain structured arrangements. The arrangements are fully as much carriers of meaning as are the words themselves. Some linguistic scholars hold that a first step in the study of language is objective description of its structure. Other scholars maintain that the words and rules which make up a language actually exist only in the act of connected speech--that language is a continuous process, not a ready-made thing.

The emphasis on words and word controls in children's textbooks has overshadowed concern for the arrangements in which the words have been set. The current generally accepted plan of restricting the vocabulary of children's books to words which occur most frequently in word lists compiled almost a generation ago seems unrealistic and detrimental in view of the wide vocabulary to which children react today as the result of television, radio, motion pictures, the availability of children's books, and the many opportunities most children have for first-hand experiences both in travel and at home.

It appears that little is known regarding the linguistic structure of the sentences used by children of differing ages. A major hypothesis of this investigation is that a study of children's speech, its structure and its patterns of arrangement and flow, may offer suggestions for the construction of better reading textbooks for beginners and possibly for older children as well.

Related Literature

The literature most closely related to this study falls into three categories: studies concerned with the maturity of children's language, investigations of factors related to readability, and material presented by the structural linguists. Much of the material that falls into the first category is well summarized and interpreted by McCarthy in A Manual of Child Psychology (24) and by Carroll in the Encyclopedia of Educational Research (4).

Early studies by Davis, Fisher, McCarthy, Shirley, and Smith presented observations on gross aspects of the language development of young children (6; 10; 25; 34; 37). They provided normative data on such indices as amount of talking, mean sentence length, and percentage of complex and compound sentences. In summarizing these studies, McCarthy concluded that mean sentence length is the measure of linguistic maturity which is most "reliable, easily determined, objective, quantitative, and easily understood" (23:550). A study reported by Templin in 1957 was patterned after these early studies and utilized some of the same indices of maturity (38). In closely comparable testing situations this study found children using sentences significantly longer than those reported in the studies of the 1930's. This may mean that children are acquiring language more rapidly today because of increased verbal stimulation and increased permissiveness in both home and school.

Researches over a number of years have brought out the fact that children, by the time they reach early school age, use complex, compound, and complex-compound sentences. Nice (26) traced the stages through which children go in the development of skill in sentence formation, and Hahn (16) in a more recent study of the recorded speech of children reinforced these earlier findings. The study by Templin further substantiated their conclusions, as have a number of studies dealing with children's written language. Among these latter studies was one by LaBrant (19) which gave attention to children's use of elements of subordination as a measure of maturity in the use of language.

The present study was not concerned with measuring the readability of the textbook material surveyed but rather with a descriptive comparison of the structure of sentences used by children with the structure of the sentences in selected samples of textbook material designed for the same grade level.

Early studies of the difficulty of reading material were concerned solely with the proportion of words which were found in the Thorndike 10,000 word list. By 1935, according to Chall (5:48-53), Ojemann as well as Gray and Leary was giving some attention to proportion of simple sentences and to prepositional phrases. Little or nothing has been added to the list of indices since that time. In 1948, Flesch (11) advocated that readability be approached in part as a matter of linguistics, utilizing the analysis techniques of modern linquistic science. Others have hinted at the need for measures related to sentence structure, but thus far no one appears to have been able to provide a formula for the use of such measures.

In her appraisal of research on readability and its application, published in 1958, Chall concluded that "after the continuing search for factors in the quantitative studies, no more than four elements have proved useful in predicting difficulty. Moreover, out of these four, two add very little in an over-all prediction. Why is this so? Can we actually dismiss the entire problem of difficulty as one of hard or long words and long sentences?" (5:47).

Modern linguistics conceives of a language as a structured system of arbitrary vocal sounds and sequences of sounds used to carry on interpersonal communication and to manage the things and processes of human experience. It teaches that all the meaningful sound patterns of a language can be distinguished and described as linguistic units together with their characteristic distributions and interrelationships within the language.

The basic sound-signalling system of English consists of 45 units called phonemes: nine vowels, three semivowels (y, h, w), 21 consonants, four degrees of pitch, four degrees of loudness or stress, and four kinds of juncture. In any utterance, the pattern consists in the arrangements of these meaningless building blocks in combinations that have meaning (12; 13; 21; 39; 41). The phonemes are the minimal sound units which occur in the language and make differences in meaning. They appear in speech as parts of larger organizations. Phonemes are put together into morphemes, and morphemes into patterns of syntax.

All linguists emphasize the fact that speech is the primary form of language and underlies all writing. It is generally conceded that the development of competence in spoken language should run ahead of the development of competence with reading and writing. At least in the primary grades, language patterns should be learned in the spoken language before they are introduced in the printed form. An hypothesis which is as yet untested is in a sense the reverse of this: when children have mastered certain language patterns in their speaking, these patterns can begin to appear in the materials designed for teaching them to read.

Design and Procedures of the Study

This was a loosely structured descriptive study of children's language. Its major purpose was to discover, isolate, and describe the patterns of syntax found in the oral language of elementary school children and to ascertain whether they appeared in certain representative reading textbooks designed for these grade levels. Though there were minor differences in the treatment of variables at certain grade levels and of additional variables treated at the sixth grade level, the procedure for the study included the following phases:

1. Recording the spoken language of children in the first through the sixth grades in its spontaneous form in free interaction with children and adults

2. Analyzing this spoken language for the following points:

    a. Syntactic structure of sentences
    b. Frequency of occurrence of certain patterns of syntax
    c. Amount and kinds of subordination
    d. Length of sentences
    e. Flow of language

3. Finding the relationships of these points to the age, sex, and intelligence level of the children and to the socio-economic and educational level of their parents

4. Searching the textbooks of certain representative series of readers to ascertain the point at which patterns that were used freely by children began to appear in the readers

5. Analyzing selected samples from the readers at each grade level for the occurrence of patterns commonly used by children.

To the variables of age, sex, intelligence, and socio-economic status, the variable of parental education was added at most grade levels. Also at the sixth grade level, the quality of children's spoken language was compared with that of their silent reading comprehension, their oral reading interpretation, and their listening comprehension.

The Project Team

The work of this research project was carried on cooperatively by a team of workers. Six doctoral candidates assumed the responsibility for collecting the background records, testing the children in the schools, selecting the children for the sample, and making the recordings of speech.* Procedures for all of this work were conceived and planned cooperatively by the entire team and carried out as uniformly as possible. Five members of the team concentrated their work at a selected grade level, while the sixth chose to make a comparative study of certain aspects of speech at three grade levels. The work of these six students was expanded by each of them into a doctoral thesis. While all of the theses are similar in their procedures at certain points, each is unique not only in the grade level studied but also in the handling of variables and in the contribution the study makes to knowledge of children's language.[*]

---

*As assistant director of the project, Eldonna Evertts assumed the responsibility for much of this work as well as for a large share of the statistical processing of the data.

The Population Sample

The 575 children in the study were selected by random sampling from among the 3,801 children enrolled in the 16 public schools of the Metropolitan School District of Bloomington, Indiana. The schools ranged in size from two-room rural schools to fairly large city schools and covered the ethnic and socio-economic range of the community. The sample included 100 children in each of the six grades except for the fourth grade, in which complete records were obtainable on only 75 children. The only control imposed on the sample was the exclusion of children who were regularly enrolled in classes for the mentally retarded.

The total population for the study included 296 boys and 279 girls ranging in chronological age from 6 years to 14 years 11 months. Table 1 shows the distribution according to age and sex.

First steps in gathering data were the obtaining of background information from the parents and the administration of an intelligence test. The data provided by the parents included the chronological age and sex of the child and the number and ages of siblings, together with statements of paternal occupation and the highest level of schooling attained by each parent.

Intelligence ratings. The California Short-Form Test of Mental Maturity, Form S,[†] was administered in the spring of 1959 to all children enrolled in the 16 elementary schools of the Metropolitan District. This test yielded a total intelligence score based on verbal and non-verbal subtests. Table 2 shows the distribution of the sample according to sex and total intelligence. The scores ranged from 60 to 159 following a curve skewed slightly toward the upper range,

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[*] Doctoral dissertations at Indiana University. Each was a segment of the project:

Francis, Sarah Evelyn, *An Investigation of the Oral Language of First Grade Children.*

Barnes, Margaret Davis, *An Analysis of the Oral Language of Second Grade Children with Emphasis upon Patterns of Sentence Structure and Verbs.*

Shubkagle, Ruby Friese, *An Analysis of the Oral Language of Third Grade Children.*

Hochstetler, Ruth Jean, *An Analysis of the Oral Language of Fifth Grade Children in Guided Situations.*

Evertts, Eldonna L., *An Investigation of the Structure of Children's Oral Language Compared with Silent Reading, Oral Reading, and Listening Comprehension.* (Sixth Grade).

DeGraff, Richard A., *A Comparison of the Structure of Oral Language at the First, Third, and Fifth Grade Levels.*

[†] See Appendix C.

TABLE 1. DISTRIBUTION OF PUPILS ACCORDING TO GRADE, SEX, AND CHRONOLOGICAL AGE

Chronological age	Grade												Total		
	1		2		3		4		5		6		Boys	Girls	Grand total
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls			
14.11 - 14.6											1		1		1
14.5 - 14.0											1		1		1
13.11 - 13.6											1		1		1
13.5 - 13.0									1	1	3	4	4	5	9
12.11 - 12.6									2	2	5	5	7	7	14
12.5 - 12.0									2	2	10	14	12	16	28
11.11 - 11.6									4	2	19	22	23	24	47
11.5 - 11.0							1		19	18	8	6	28	24	52
10.11 - 10.6								1	20	16	1		21	17	38
10.5 - 10.0					1	1	1	3	6	4			8	8	16
9.11 - 9.6				1	6	4	5	1	1				12	6	18
9.5 - 9.0			4	1	17	20	14	10					35	31	66
8.11 - 8.6			3	2	23	16	15	14					41	32	73
8.5 - 8.0	1	1	15	11	3	9	6	4					25	25	50
7.11 - 7.6	4	1	20	22									24	23	47
7.5 - 7.0	17	24	11	10									28	34	62
6.11 - 6.6	20	23											20	23	43
6.5 - 6.0	5	4											5	4	9
Total	47	53	53	47	50	50	42	33	55	45	55	45	296	279	575

TABLE 2. DISTRIBUTION OF PUPILS ACCORDING TO GRADE, SEX, AND TOTAL INTELLIGENCE

Total intelligence quotient	Grade												Total		
	1		2		3		4		5		6		Boys	Girls	Grand total
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls			
159 - 150	1		0	0	0	0			0	0			1		1
149 - 140		1	1	2	0	0	2	0	2	2	2	1	7	6	13
139 - 130	5	4	4	4	4	1	1	1	2	2	2	3	18	15	33
129 - 120	8	8	13	8	6	8	7	3	7	3	8	9	49	39	88
119 - 110	12	11	4	11	15	15	10	7	13	13	8	10	62	67	129
109 - 100	12	18	17	13	11	10	7	8	10	8	10	17	67	74	141
99 - 90	8	4	8	7	7	11	11	10	13	10	10	3	56	46	102
89 - 80	1	6	3	1	6	4	3	1	4	5	7	4	24	21	45
79 - 70	0	0	2	0	1	1	1	2	3	2	2	2	9	7	16
69 - 60	0	1	1	1	0	0	0	1	1	0	0	2	2	5	7
Total	47	53	53	47	50	50	42	33	55	45	49	51	296	279	575

with the mean of boys and girls for each grade ranging between 105 and 112, with no great sex differences.

Verbal intelligence quotients are similarly presented in Table 3 and non-verbal intelligence quotients in Table 4. In both categories the range was wide and the curves skewed toward the upper level.

Table 5 shows mental ages ranging from 4.6 to 16.11 years, a wide distribution.

Occupational status. Because it had been used in several earlier studies of children's language, the Minnesota Scale for Paternal Occupations** was selected as the basis for categorizing paternal occupations and providing a gross stratification of the sample according to socio-economic status. Classification IV was omitted in this case because, while a number of children lived on farms, none of the fathers were without other occupations. Again, as Table 6 indicates, the sample is skewed toward the upper level. Comparison of these percentages with percentages listed for the various occupational groups in the 1962 report of the Bureau of Labor Statistics, according to *The World Almanac, 1962* (p. 256), shows the study population to be distinctly heavy at the professional level and slightly low at the managerial and laborer levels. The other categories are arranged so differently that comparison is impossible. Undoubtedly the fact that children from university-connected families were sprinkled through the schools accounts for the heavy proportion of the sample at the professional level.

Educational background of parents. Parents' responses regarding educational attainment were stratified according to a seven-point scale ranging from attendance at elementary school to 18 or more years of education. Table 7 shows that more mothers than fathers went beyond elementary school, but more fathers than mothers attained 18 or more years of education.

The Speech Sample

The oral language which was analyzed in this study was obtained in situations as informal and unstructured as circumstances permitted. It was recorded by a magnetic tape recorder with a unidirectional high impedence microphone with which clear records were obtained of even the most delicate, high frequency child-voices. The recordings were made in school settings familiar to the children, and sufficient talk was recorded to provide a usable sample for each child. Recording time of 15 to 30 minutes was adequate in most instances.

Procuring the recordings. Children were brought from the classroom to the recording room in groups of two or three. They were seated about a table which displayed the microphone surrounded by

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**See Appendix B.

TABLE 3. DISTRIBUTION OF PUPILS ACCORDING TO GRADE, SEX, AND VERBAL INTELLIGENCE

Verbal intelligence quotient	Grade												Total		
	1		2		3		4		5		6		Boys	Girls	Grand total
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls			
159 - 150	0	0		2					0	0				2	2
149 - 140	4	2	2	3	1	1			0	3	1	2	8	11	19
139 - 130	5	1	5	4	6	6	6	1	5	2	4	5	31	19	40
129 - 120	9	8	11	8	8	5	4	3	5	5	8	8	45	37	82
119 - 110	5	10	5	7	7	13	12	6	14	9	6	13	49	58	107
109 - 100	11	11	11	10	12	8	8	11	13	11	10	13	65	64	129
99 - 90	9	12	13	7	6	13	6	5	11	6	9	3	54	46	100
89 - 80	4	6	3	4	6	3	4	4	4	9	9	6	30	32	62
79 - 70	0	2	2	1	3	1	2	1	2	0	2		11	5	16
69 - 60	0	0	0	1	1			1	1	0	0		2	2	4
59 - 50		1	1					1				1	1	3	4
Total	47	53	53	47	50	50	42	33	55	45	49	51	296	279	575

TABLE 4. DISTRIBUTION OF PUPILS ACCORDING TO GRADE, SEX, AND NON-VERBAL INTELLIGENCE

Non-verbal intelligence quotient	Grade												Total		
	1		2		3		4		5		6		Boys	Girls	Grand total
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls			
169 - 160									2				2		2
159 - 150	2	2	3	1	1				1	1	1		8	4	12
149 - 140	1	1	3	0	0		2	1	1	1	1	2	8	5	13
139 - 130	3	8	4	4	4	2	2	0	2	3	5	2	20	19	39
129 - 120	6	8	4	12	8	9	6	5	6	6	6	8	36	48	84
119 - 110	8	9	10	7	11	7	6	7	15	6	8	9	58	45	103
109 - 100	18	11	14	14	12	19	12	7	2	12	9	8	66	72	138
99 - 90	7	8	10	6	6	6	9	5	13	4	10	11	55	40	95
89 - 80	1	5	3	2	4	4	3	4	5	6	5	2	21	23	44
79 - 70	1	1	2	0	3	1	2	3	5	3	3	5	16	13	29
69 - 60	0	0		1	1	1	0	1	3	3	1	2	5	8	13
59 - 50						1						1		2	2
49 - 40															
39 - 30												1		1	1
Total	47	53	53	47	50	50	42	33	55	45	49	51	296	279	575

TABLE 5. DISTRIBUTION OF PUPILS ACCORDING TO GRADE, SEX, AND MENTAL AGE

Mental age	Grade												Total		
	1		2		3		4		5		6		Boys	Girls	Grand total
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls			
16.11 - 16.6									1	0	0	1	1	1	2
16.5 - 16.0									1	0	1	1	2	1	3
15.11 - 15.6									0	0	4	4	4	4	8
15.5 - 15.0									2	1	0	2	2	3	5
14.11 - 14.6									0	2	5	4	5	6	11
14.5 - 14.0									1	0	4	2	5	2	7
13.11 - 13.6									3	2	3	2	6	4	10
13.5 - 13.0									3	3	4	7	7	10	17
12.11 - 12.6									4	6	5	9	9	15	24
12.5 - 12.0					1	1			11	4	4	5	16	10	26
11.11 - 11.6					4	0	2	0	3	5	6	4	15	9	24
11.5 - 11.0					3	4	3	1	6	5	5	3	17	13	30
10.11 - 10.6	1	1	3	1	3	4	6	5	7	8	4	0	24	19	43
10.5 - 10.0	0	0	5	4	9	4	7	6	6	4	2	1	29	19	48
9.11 - 9.6	1	2	3	3	10	14	4	2	4	1	2	2	24	24	48
9.5 - 9.0	2	1	9	10	9	5	12	5	0	4		2	31	27	58
8.11 - 8.6	7	6	5	8	3	8	4	6	1			0	20	28	48
8.5 - 8.0	8	5	10	11	5	6	2	4	0			1	25	27	52
7.11 - 7.6	9	12	11	7	3	2		1	2			0	25	22	47
7.5 - 7.0	8	12	3	2	1	2	1	1	0			0	13	17	30
6.11 - 6.6	8	7	3				1	2				1	12	10	22
6.5 - 6.0	3	3	0										3	3	6
5.11 - 5.6		2	1										1	2	3
5.5 - 5.0		1		1									0	2	2
4.11 - 4.6		1											0	1	1
Total	47	53	53	47	50	50	42	33	55	45	49	51	296	279	575

TABLE 6. PERCENTAGE DISTRIBUTION OF PUPILS ACCORDING TO OCCUPATIONAL STATUS OF THE PARENTS

Occupational classification	Percentage					
	1	2	3	4*	5	6
I. Professional	19.0	25.0	16.0	10.6	18.0	14.0
II. Semi-professional and managerial	11.0	3.0	18.0	10.6	15.0	14.0
III. Clerical, skilled trades, retail business	16.0	42.0	26.0	12.0	18.0	16.0
IV. Farmers‡						
V. Semi-skilled occupations, minor clerical positions, and minor business	33.0	15.0	19.0	41.3	26.0	37.0
VI. Slightly skilled trades	16.0	10.0	17.0	21.3	17.0	16.0
VII. Day laborers	5.0	5.0	4.0	4.0	6.0	3.0

*Grade 4 is based on 75 cases, all other grades on 100 cases.

‡Omitted in this study.

TABLE 7. DISTRIBUTION OF PUPILS ACCORDING TO EDUCATIONAL BACKGROUND OF THE PARENTS

Educational background of parents	Grade												Total		
	1		2		3		4		5		6		Fathers	Mothers	Grand total
	F*	M*	F	M	F	M	F	M	F	M	F	M			
Attained 18 or more years of education	21	2	18	1	18	4	3	1	8	0	12	3	80	11	91
Attended graduate school	2	5	3	5	10	6	3	4	11	3	3	3	32	26	58
Completed college	7	15	9	13	4	9	6	4	5	7	8	9	39	57	96
Attended college	10	16	16	12	7	10	7	4	11	20	15	12	66	74	140
Completed high school	21	25	18	36	23	28	17	30	26	24	18	29	123	172	294
Attended high school	36	37	32	30	31	38	20	20	37	46	40	44	196	215	411
Attended elementary school	3	0	4	3	7	5	19	12	2	0	4	0	30	20	59
Total	100	100	100	100	100	100	75	75	100	100	100	100	575	575	1150

*F = fathers; M = mothers.

several figurines of familiar storybook characters ranging, depending upon the age of the children, from Mistress Mary and Red Riding Hood to Alice in Wonderland, Tom Sawyer, and Paul Bunyan. The children were stimulated to talk about themselves, their families, pets, or whatever was of interest at the moment. As talk progressed, the interviewer asked questions or made comments only when necessary to keep the conversation flowing; the storybook figures served as primers on occasion. The recording continued until each child was talking easily and naturally.

Preparing and processing the samples. Though the conversations recorded on the tapes were transferred to discs for permanent storage, it proved more satisfactory to work from the tapes in making and verifying the transcriptions. Final responsibility for the accuracy of the transcriptions rested with the investigator who conducted the interviews. The investigator listened to the tapes as many times as necessary to assure proper division of the speech into phonological units. This was accomplished through careful attention to juncture, intonation, and meaning. In the example which follows, the unit between double-cross, #, junctures is a phonological unit--a unit of speech ending with a distinct falling intonation which signals a terminal point. A phonological unit may contain one or several meaningful communication units which are spoken with varying intonation, and the partial pauses such as are indicated here by the single-bar, /, and double-bar, //, junctures. (In this study the term sentence will mean a phonological unit.)

> I have to be saving my money / you know / because we're going to be gone // let's see // I guess it is four or five months #
> I'm saving up my money for that and then afterward // I'm keeping it for what I want #

A trained linguist familiarized the investigators with principles and techniques for this work of segmentation and checked some of it for reliability.

After all segmentation and correcting were done, the corpus was retyped and duplicated by ozalid process. Again the investigator followed the transcription while listening to the tape in order to select for analysis 25 sentences or phonological units of each child's conversation. Selection centered about a point in the recording at which the child talked freely and at some length without interference from either investigator or another child. The selected sentences clustered about this base were consecutive. These sentences were then typed and duplicated for analysis. Each sentence was analyzed by a trained analyst to identify on Level I the patterns of stationary elements, which were designated as slots, and the elements which could appear in different locations and were designated as movables. Certain elements in the sentences were analyzed on a second level to determine the types of satellites or subordination elements which served as fillers for slots and movables.

After the 25 sentences for each child were analyzed and tabulated, the tabulations were coded for processing by statistical machines. Programming was arranged to provide data on the frequency of use of language patterns at Levels I and II and on the relationship of these frequencies to the variables of age; sex; verbal, non-verbal, and total intelligence scores; mental age; socio-economic status; and parental education. Other variables were included for certain grades: number, sex, and ages of siblings for first grade; use of verb forms for second grade; and silent reading comprehension, oral reading interpretation, and listening comprehension for sixth grade.**

The Textbook Sample

Samples of material were taken from each reading textbook at each of the six grade levels for four widely-used series of reading texts. In the case of preprimers, the text of the entire book was studied. Each new pattern which appeared in the sample selected from a book was subjected to analysis in the same manner as the oral language samples. Also, each of the books was searched to ascertain the general location at which patterns commonly used by children began to appear in the text. (See Appendix A.)

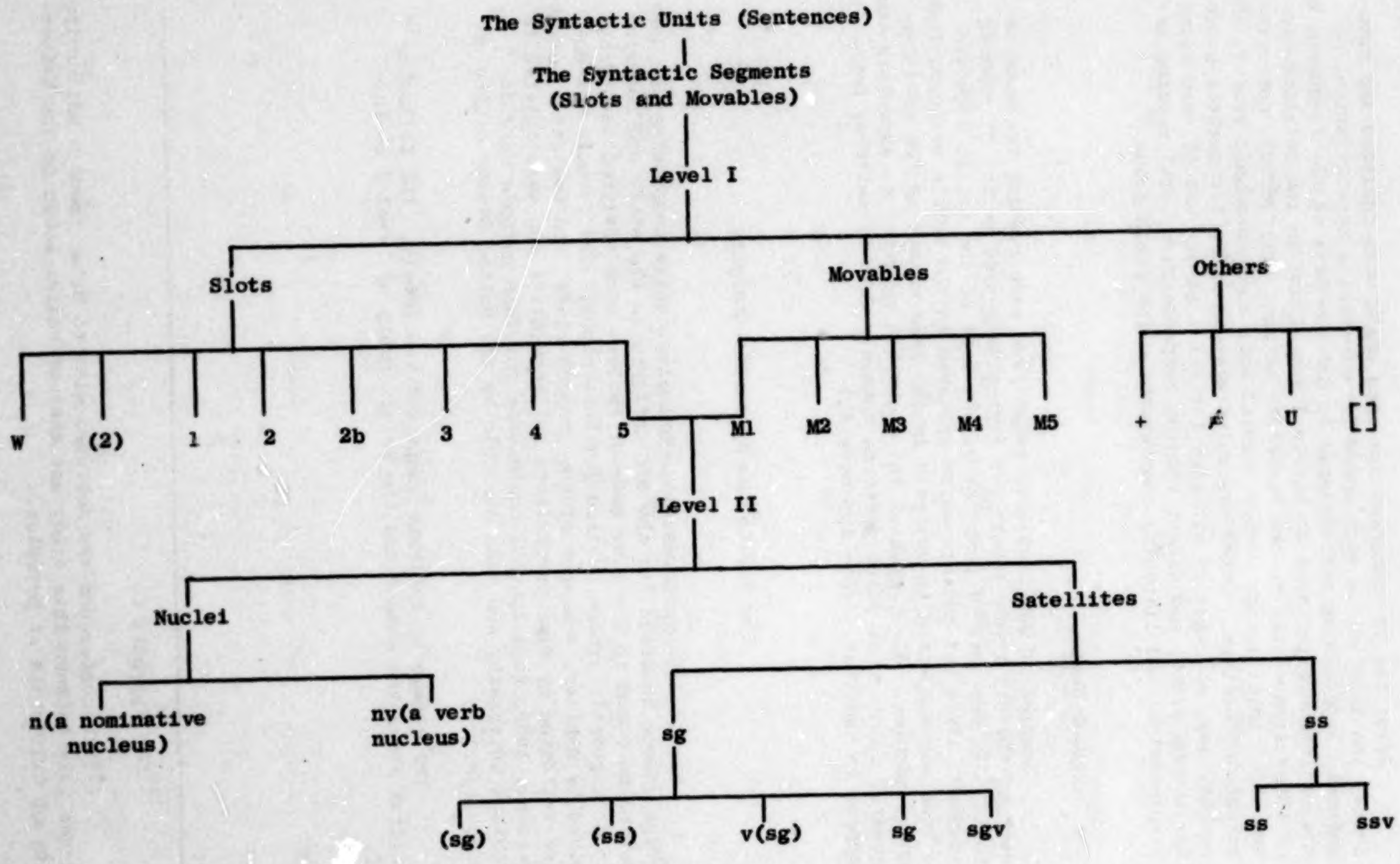
The Key to the Syntactic Analysis

The 14,375 sentences or phonological units comprising the language sample selected for the 575 children in the study and certain sentences found in the four sets of readers were analyzed according to a linguistic scheme devised for this study. The formula was devised by Ekhtiar, a member of the project staff, and was later refined and validated by five specialists in linguistics who were invited in October, 1959, to a special conference for this purpose held at Indiana University and made possible by the United States Office of Education.**

The scheme of analysis comprised two levels. The following diagram shows the scheme and the relationship of Level I to Level II.

**See Appendix C.

**This conference was designed also to bring about a uniformity of analysis between this study and that of Walter Loban of the University of California at Berkeley.


The Syntactic Units (Sentences)
The Syntactic Segments
(Slots and Movables)
Level I
Slots
Movables
Others
W
(2)
1
2
2b
3
4
5
M1
M2
M3
M4
M5
+
#
U
[]
Level II
Nuclei
Satellites
n(a nominative nucleus)
nv(a verb nucleus)
sg
ss
(sg)
(ss)
v(sg)
sg
sgv
ss
ssv

The following is the key to the symbols used in the diagram.

The symbols used in the analysis and the terms are defined according to the level order. The term which is being defined is underlined in the example.

Level I. Concerned with: (a) the scansion of sentences into fixed slots and movables; (b) the separation of the utterances and nonstructural elements from the structural elements of the sentence; and (c) the tabulation of the fixed slots, the movables, and the sentence connectors.

W A question word which occurs in the initial position of an interrogative sentence, e.g.,

$\underset{\text{W}}{\underline{\text{Why}}}$ did Mr. Brown go there yesterday?

1 The subject (the subject slot) of the sentence which may be a word, a phrase, a clause, or a combination of phrases and clauses, e.g.,

$\underset{\text{1}}{\underline{\text{Mr. Brown}}}$ is my friend.

2 The verb slot of the sentence which may be a verb or a compound predicate, e.g.,

Mr. Brown $\underset{\text{2}}{\underline{\text{will give}}}$ his students piano lessons next Monday.

He $\underset{\text{2}}{\underline{\text{went and bought}}}$ the paper.

(2) An auxiliary verb which helps the verb but does not convey an independent meaning, or denotes the continuation of a verb phrase, e.g.,

Why $\underset{\text{(2)}}{\underline{\text{did}}}$ he go there yesterday?

He turned the lights $\underset{\text{(2)}}{\underline{\text{out}}}$.

2b A verb slot which denotes passive verbs, verbs of the to be class, or copulative verbs, e.g.,

He $\underset{\text{2b}}{\underline{\text{is}}}$ very happy with his family now.

$\underset{\text{2b}}{\underline{\text{There was}}}$ a car on the road.

3 The inner complement (an indirect object) of a sentence, e.g.,

Mr. Brown gives $\underset{\text{3}}{\underline{\text{his students}}}$ piano lessons on Saturdays.

4 The outer complement (a direct object) of a sentence, e.g.,

Mr. Brown gives his students $\underline{\text{piano lessons}}_{4}$ on Saturdays.

5 The predicate nominative of the class of the verb to be, e.g.,

Mr. Brown is $\underline{\text{very happy with his family now}}_{5}$.

M Those syntactic segments which "move" have been grouped into five subclasses.

M_1 The "there" group (an expression of place) of a sentence, e.g.,

Mr. Brown gives his students piano lessons $\underline{\text{at home}}_{M_1}$.

M_2 The "how/so" group (an expression of manner), e.g.,

He ran $\underline{\text{quickly}}_{M_2}$ down the street.

Mr. Brown gives his students piano lessons at home $\underline{\text{regularly}}_{M_2}$.

Some types do not lend themselves to movability, e.g.,

We $\underline{\text{just}}_{M_2}$ arrived.

M_3 The "then" group (an expression of time) of a sentence, e.g.,

Mr. Brown gives his students piano lessons at home regularly $\underline{\text{on Saturdays}}_{M_3}$.

M_4 The "because/if" group (an expression of purpose or cause), e.g.,

Mr. Brown gives his students piano lessons at home $\underline{\text{because he is comfortable there}}_{M_4}$.

M_5 A preposition plus the slot 3 (indirect object), e.g.,

Mr. Brown gives piano lessons $\underline{\text{to his students}}_{M_5}$ on Saturdays.

+ A connector which joins structural sentences or sentence segments together, such as and, but, etc., e.g.,

Last week a group of Persian students came to the United

States and many of them visited Washington.
+

ø A connector, such as until, because, for, so, or, and if, which joins a causative subordination to the rest of a sentence, e.g.,

His father hates dogs so he told him to give it away.
ø

U A short utterance may be a word or a word-group which holds meaning and usually is accompanied with falling, fading intonation, e.g.,

Did you see your friend yesterday? Yes.
U

[ ] Nonstructural elements which denote a maze, hesitation, false start, primer, or onomatopoeia are placed between brackets, e.g.,

[Our uh] our dog [well he] got away.

Level II: Mainly concerned with the type of satellites or subordinations used in the fixed slots or the movables.

nucleus The head of a syntactic word group.

n The nucleus of a subject group (a nominal group), e.g.,

The cold fresh milk is here.
n

nv The nucleus of a verb group, e.g.,

Mr. Brown shouldn't have done that.
nv

satellites The modifiers of a noun or of a verb having these grammatical shapes: a word or words, a phrase or phrases, and a clause or clauses. Satellites are either related to the subject or related to the verb. When satellites are related to the whole sentence, they are classified under the verb-satellites.

(sg) The (sg) in the parentheses stands for the satellite group; it is a phrase related only to "the subject" of a sentence (slot 1), e.g.,

The man next to you is my teacher.
(sg)

(ss) The (ss) in parentheses indicates the subject-predicate satellite; it is a clause related only to "the subject" (slot 1) of a sentence, e.g.,

The man who left the room now is my teacher.
(ss)

v(sg) The v(sg) denotes the verb satellite group (a main verb, verb phrase, or compound predicate) in the slot 2, e.g.,

Mr. Brown should have come here tonight.
v(sg)

sg The sg without parentheses stands for the satellite phrase group which has been classified on Level I as 3, 4, or 5, e.g.,

Mr. Brown bought an interesting book today.
sg

ss The ss without parentheses indicates the satellite segment, usually a clause, which has been classified on Level I as 3, 4, or 5, e.g.,

This is a course in which I am most interested.
ss

sgv_1
sgv_2
sgv_3
sgv_4
sgv_5

The sgv denotes the satellite phrase group of the verb and may be an M_1, M_2, M_3, M_4, or M_5 on Level I, e.g.,

Mr. Brown works in our office.
sgv_1

ssv_1
ssv_2
ssv_3
ssv_4
ssv_5

The ssv stands for the subject-predicate satellite of the verb and may be an M_1, M_2, M_3, M_4, or M_5 on Level I, e.g.,

Mr. Brown teaches where I worked for many years.
ssv_1

This scheme will be further explained as it is applied to the speech sample.

CHAPTER II

THE ANALYSIS OF CHILDREN'S LANGUAGE

Twenty-five phonological units or sentences from each of 575 children, 14,375 units in all, constituted the language sample studied. This represented 75 children in Grade 4 and 100 children at each of the other grade levels, 1 through 6. The processing of this sample was designed to provide information regarding the basic patterns of structure which appeared in the recorded oral language of the children, the patterns of subordination and elaboration which were employed, and the extent to which these language patterns were related to the age, sex, and intelligence of the children and the socio-economic status and level of education of their parents. In order to do this, the transcriptions of speech were analyzed on two levels, the first to delineate the basic structure, and the second to gain more detailed information regarding certain portions of the structure.

Unanalyzed Elements

The nature of some elements in the speech recordings caused them to be tabulated and given attention but not analyzed for syntactic structure.

Short Utterances

Children at each grade level used some short utterances, each of which was meaningful in its setting though it was structurally incomplete. The following are typical examples which were labeled U in the analysis on Level I and tabulated by IBM processing to secure the total frequency of use.

Yeah.	Twelve?
Sometimes.	About 2:30?
No.	Saturday or Sunday?
Not very much.	Bowling ball?

Table 8 shows the frequency of use of these short utterances by children at each grade level. These utterances were not further analyzed, since none contained the elements necessary to a complete sentence. In each grade, some children used no short utterances, a large proportion of the children used a few, and a small number of children used several short utterances.

TABLE 8. FREQUENCY OF SHORT UTTERANCES, PRESENTED ACCORDING TO GRADE LEVEL

Grade level	Number of pupils	Total frequencies	Average per pupil
I	100	523	5.23
II	100	331	3.31
III	100	339	3.39
IV	75	185	2.47
V	100	546	5.46
VI	100	262	2.62

Mazes, Grades 1, 3, and 5

Both adults and children occasionally use sounds in their speech which are not pertinent to the structure or meaning of what they are uttering. In this study, any part of a phonological unit which was not syntactically or meaningfully pertinent was called a *maze*.* The mazes which the children used were given special study at the levels of Grades 1, 3, and 5. These mazes were subdivided into four groups identified as (1) noises, (2) holders, (3) repeats, and (4) edits. *Noises* were unintelligible sounds such as "ah," "er," and the like. *Holders*, such as "well," "you see," and "now uh," were used to hold attention. *Repeats* were repetition of words such as "you--you," "I think--I think." *Edits* were words used by the speaker which indicated a correction or change of direction in what he was saying. The tabulation of mazes for these three grades appears in Table 9. Fewer noise and repeat mazes were used in Grade 5 than in earlier grades and these older children did more holding of attention, perhaps in order to come to terms with what they wanted to say.

More than half of the total number of mazes used by each grade appeared at the beginning of the phonological unit, approximately one third in an interior position within the unit, and less than a tenth at the end of the unit.

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*A term borrowed from research by Loban (Appendix A).

TABLE 9. PER CENT OF EACH TYPE OF MAZE USED BY CHILDREN IN GRADES 1, 3, AND 5

Type of maze	Per cent for grade		
	1 (N = 336)	3 (N = 490)	5 (N = 272)
Noise	22.61	30.20	12.50
Holder	33.63	40.61	57.35
Repeat	22.61	15.30	11.38
Edit	21.13	13.89	18.75
Total	99.98	99.90	99.98

Length of Phonological Units

The phonological units employed by the children varied considerably in length. When the children were talking in several related sentences about something in which they were interested, the units tended to be longer. When they were responding to the ideas of someone else, adult or child, some of the responses were short. It is possible that the degree of security which children felt in the recording situation may have influenced the length of response in some instances.

The length of the phonological units used by children varied more within a grade than from grade to grade. Evidence of this appears in Table 10, which shows the mean length of phonological units in Grades 1, 4, and 6 and the range of the means for boys and girls.

Data available for Grades 4 and 6 compare mean sentence length for children in the highest and lowest quarters of their group according to the chronological age and intelligence of the children and the occupational and educational status of their parents. Differences in means are small in most instances and are always in favor of the high group. Younger children use longer sentences than do older children; this is true in each grade. These data are presented in Table 11.

In several early studies of children's language and a more recent one by Templin (38), length of sentence was found to be a measure of maturity in the use of language. When children's talk is divided into units by intonation, as in this study, length of sentence cannot be so considered. The falling intonation followed by a pause was used to indicate the point at which the child himself terminated an utterance. Often there were several meaning units (which earlier researchers have arbitrarily called sentences) between the child's terminal points as he indicated them by falling intonation and pause. These meaning units have, in this study, been considered structural units, but they have been treated as part of the phonological units within which the child placed them, rather than as separate elements.

TABLE 10. MEAN AND RANGE OF LENGTH OF PHONOLOGICAL UNITS, PRESENTED BY GRADE AND SEX

Grade and sex	Mean sentence length	Range of sentence length	Range of mean sentence length
GRADE 1			
Boys	11.04	1 - 76	5.40 - 22.56
Girls	10.70	1 - 72	1.92 - 20.76
GRADE 4			
Boys	13.04	1 - 62	7.52 - 20.40
Girls	12.30	1 - 47	7.36 - 16.56
GRADE 6			
Boys	13.58	1 - 97	4.60 - 25.80
Girls	14.50	1 - 85	6.28 - 26.32

Many children tend to use run-on units of the sort indicated below:

> I used to have another dog and its name was Peanut but it got run over by a car and now I have another one and its name is Crickett and I have a big dog and its name is Shauntesy and the little dog always follows around Shauntesy.
>
> Then after we went to Santa Claus Land we took a drive to Lincoln State Park on the way back and when we went we went to this log hut and we got to see the first house that Abraham Lincoln lived in and the only thing left was the fireplace cause it fell down but they cleared out all the junk and the chimney was the only thing that was left.

In each case, a more mature speaker would have cut these into two or more sentences through the use of subordination.

TABLE 11. MEAN SENTENCE LENGTH OF HIGHEST AND LOWEST QUARTERS OF PUPILS IN GRADES 4 AND 6, ACCORDING TO SELECTED VARIABLES

Variable	Grade 4	Grade 6
CHRONOLOGICAL AGE		
Higher (or older)	11.58	13.32
Lower (or younger)	13.24	14.09
VERBAL INTELLIGENCE		
High	13.12	15.45
Low	12.02	13.53
NON-VERBAL INTELLIGENCE		
High	13.25	15.56
Low	12.54	13.04
TOTAL INTELLIGENCE		
High	12.94	16.00
Low	12.40	13.34
MENTAL AGE		
High	12.58	15.96
Low	12.59	13.03
OCCUPATIONAL STATUS		
High	12.80	15.41
Low	12.08	13.44
FATHER'S EDUCATION		
High	12.92	14.89
Low	12.10	13.06
MOTHER'S EDUCATION		
High	13.04	15.01
Low	12.16	12.10

Common Language Patterns

Statistical processing revealed that the total number of language patterns used by children in the study ranged from 658 by first grade children to 1,041 by sixth grade children. (See Table 12.) Some patterns were used with great frequency by children of all levels, indicating that these are the basic building blocks of their language. Certain of these basic patterns appeared in many variations, some with high frequency. Other patterns were used infrequently, a great many of them only once in the speech sample for an entire grade. Among the 25 patterns that ranked highest in frequency at each grade level, there is wide overlap, though there are 10 patterns which ranked among the first 25 in the higher grades which did not appear at all in the sample for Grade 1.

TABLE 12. TOTAL NUMBER OF STRUCTURAL PATTERNS USED AND FREQUENCY OF USE OF EACH AT FOUR GRADE LEVELS

Grade	Total number	Frequency of use		
		1 - 4 times	5 - 10 times	More than 10 times
1	638	538	53	47
2	747	652	39	51
4*	722	620	50	52
6	1041	918	69	54

*Based on 75 cases.

The five patterns that ranked highest in frequency at each of the four grade levels, first, second, fourth, and sixth, are all patterns the component parts of which are slots that remain stationary and immovable within the pattern. Any one of these patterns may appear singly as a separate phonological unit, or it may appear as part of a longer phonological unit, in which case it is preceded or followed by other patterns. Table 13 presents the patterns most frequently used by children in Grades 1, 2, 4, and 6. The symbol T before a pattern indicates that it was preceded by another pattern; a T at the end of a pattern indicates that it was followed by another pattern within the same phonological unit.

While fixed elements (slots) predominate in the language samples of these four grades, as they would tend of necessity to do in all language, children in Grade 1 used movables with high frequency that denoted place, M_1; manner, M_2; and time, M_3. These movables appeared in various positions and combinations within the phonological units at all grade levels.

TABLE 13. RANK ORDER AND FREQUENCY OF THE STRUCTURAL PATTERNS MOST COMMONLY USED BY CHILDREN IN FOUR GRADES

Structural patterns	Grade 1		Grade 3		Grade 4*		Grade 6	
	Rank order	f	Rank order	f	Rank order	f	Rank order	f
1 2 4	1	301	1	309	1	302	1	386
T 1 2 4	2	183	2	284	2	136	2	249
1 2 4 + T	3	170	3	189	3	133	3	181
1 2b 5	4	138	4	130	4	108	5	118
T 1 2 4 + T	5	115	6	74	5	84	4	130
1 2 N_1	6	77	16	34	10	37	18	33
T 1 2b 5	7	66	5	107	7	63	6	112
1 2	8	62	10	46	18	23	13	49
1 2 N_1 + T	9	61	11	43	8	51	11	52
1 2 4 T	10	54	14	37	6	64	7	74
T 1 2 N_1	11	45	13	38	9	41	10	54
N_3 1 2 4	12	42	7	71	12	29	19	31
T 1 2 N_3	13	39	17	33	17	28	20	30
N_3 1 2 4 + T	14	35	9	52	14	28	21	29
T 1 2	15	31	15	36	13	29	12	50
T 1 2 4 T	15	31	24	22	9	41	14	48
1 2 4 N_1	16	30	18	31	14	28	17	34
1 2 N_3	17	29						
1 2 4 N_3	17	29			20	21	22	28
T 1 2b 5 + T	18	26	22	25	19	23	9	55
T 1 2 4 N_1	18	26	14	37	18	23		
T 1 2 4 N_1 + T	19	26			17	25		
T N_3 1 2 4	19	26	23	23	16	26	20	30
1 2 N_2	20	25	17	28	19	23		
1 2 4 N_1 + T	20	25	25	21	23	17	23	27
2 4	20	25						
T 1 2 4 N_3	21	24	19	30				
T 1 2 N_1 + T	22	23					15	42
1 2b 5 T	22	19			11	39	16	35
T N_3 1 2 4 + T	23	19					25	25
1 2 4 N_3	24	16	24	22	15	37	21	30
T 1 2 3 4	24	18					24	26
1 2 T	25	17			20	17	19	31
1 2 + T	25	17	12	43			22	27
1 2 3 4	25	17	22	23	24	15		
N_3 1 2 N_1 + T	26	17	20	26	21	19		
1 2b 5 + T			8	37	13	31	8	37
N_3 1 2 + T			21	27				
N_3 1 2 N_1					17	25		
T 1 2 + T					18	23	22	28
T 1 2 4 N_3					20	21	25	25
T 2 4					21	19		
1 2 N_1 T					22	18		
1 2 N_2 + T					23	17		
T N_3 1 2 N_1					24	15		
T ∅ 1 2 4					25	14		

*These figures represent 75 subjects rather than 100 subjects as in the three other grades.

Comparison of Use of Basic Patterns, Grades 1 and 6

Several basic patterns appeared frequently in the speech of the youngest as well as the oldest children in the study. These patterns were used in different positions within phonological units, and the slots which composed the patterns were filled in a variety of ways. Table 14 shows some of these basic patterns containing only fixed slots.

TABLE 14. BASIC STRUCTURAL PATTERNS AND VARIATIONS WHICH OCCURRED WITH HIGH FREQUENCY IN GRADES 1 AND 6

Structural pattern	Grade 1	Grade 6
1 2 4	301	266
T 1 2 4	183	249
1 2 4 + T	170	181
T 1 2 4 + T	115	150
1 2 4 T	54	74
T 1 2 4 T	31	48
Total	854	968
1 2b 5	138	118
T 1 2b 5	66	112
1 2b 5 + T	6	57
T 1 2b 5 + T	28	55
1 2b 5 T	19	35
T 1 2b 5 T	11	18
Total	268	395
1 2	62	49
T 1 2	31	50
1 2 T	17	31
1 2 + T	17	27
T 1 2 + T	11	28
T 1 2 T	8	23
Total	146	208
1 2 3 4	17	9
T 1 2 3 4	18	26
T 1 2 3 4 + T	13	9
Total	48	44

The most commonly used pattern at all grade levels was the

1 2 4 pattern, consisting of subject, verb, and outer complement or direct object. The filler of a subject slot might be a word, phrase, clause, or combination of phrases and clauses, though in most instances it was a noun with modifiers or a pronoun. The verb slot might be filled with a verb or a compound predicate. Outer complements were composed of single words, simple compounds, or intricate clauses. First grade children used the basic 1 2 4 pattern and its variations 854 times, and sixth grade children, 968 times. The following examples show the basic 1 2 4 pattern in different positions.

$\underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{have}}}\ \underset{4}{\underline{\text{a bicycle}}}.$

$\underset{1}{\underline{\text{A hunter}}}\ \underset{2}{\underline{\text{came in and shot}}}\ \underset{4}{\underline{\text{the wolf}}}.$

$\underset{1}{\underline{\text{A girl that is fourteen}}}\ \underset{2}{\underline{\text{reads}}}\ \underset{4}{\underline{\text{it}}}.$

$\underset{1}{\underline{\text{Daddy}}}\ \underset{2}{\underline{\text{says}}}\ \underset{4}{\underline{\text{he looks like me}}}\ \underset{+}{\underline{\text{and}}}\ \underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{look like}}}\ \underset{4}{\underline{\text{my daddy}}}\ \underset{\neq}{\underline{\text{so}}}\ \underset{1}{\underline{\text{he}}}$

$\underset{2}{\underline{\text{looks like}}}\ \underset{4}{\underline{\text{my daddy}}}.$

The 1 2b 5 pattern and its variations were used 268 times in Grade 1 and 395 times in Grade 6. This pattern was composed of the subject slot, a passive verb, verb of the to be class, or copulative verb, and the predicate nominative. Examples of this pattern are:

$\underset{1}{\underline{\text{He}}}\ \underset{2b}{\underline{\text{is}}}\ \underset{5}{\underline{\text{three years old}}}.$

$\underset{1}{\underline{\text{These}}}\ \underset{2b}{\underline{\text{aren't}}}\ \underset{5}{\underline{\text{children}}},\ \underset{1}{\underline{\text{they}}}\ \underset{2b}{\underline{\text{are}}}\ \underset{5}{\underline{\text{everybody}}}.$

$\underset{1}{\underline{\text{It}}}\ \underset{2b}{\underline{\text{was}}}\ \underset{5}{\underline{\text{about the robe that Christ wore when he was crucified}}}.$

Then he was tried $\underset{T}{\text{but}}\ \underset{1}{\underline{\text{it}}}\ \underset{2b}{\underline{\text{wasn't}}}\ \underset{5}{\underline{\text{a very fair trial}}}\ \underset{+}{\underline{\text{and}}}\ \underset{T}{\text{the}}$ king

was just awful.

One of the shortest and simplest structural patterns used by the children was the 1 2 pattern, composed of subject and verb slots. This pattern was used 146 times at Grade 1 and 208 times at Grade 6.

$\underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{don't care}}}\ \underset{T}{\text{I}}\ \text{want to go.}$

$\underset{1}{\underline{\text{My brothers}}}\ \underset{2}{\underline{\text{do}}}.$

$\underset{1}{\underline{\text{This little witch}}}\ \underset{2}{\underline{\text{came out}}}.$

$\underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{didn't}}},\ \underset{1}{\underline{\text{my little niece}}}\ \underset{2}{\underline{\text{did}}}.$

Children of all grades used the indirect object or inner complement considerably less frequently than the outer complement or direct object. It appeared 48 times in the speech sample for Grade 1 and 44 times for Grade 6. Examples of the use of the 1 2 3 4 pattern are:

$\underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{gave}}}\ \underset{3}{\underline{\text{my sister}}}\ \underset{4}{\underline{\text{the old one}}}.$

$\text{My brother just wants a dog so}\ \underset{T}{\text{bad,}}\ \underset{1}{\underline{\text{we}}}\ \underset{2}{\underline{\text{are going to get}}}\ \underset{3}{\underline{\text{him}}}\ \underset{4}{\underline{\text{one}}}.$

$\underset{1}{\underline{\text{My brother-in-law's father}}}\ \underset{2}{\underline{\text{showed}}}\ \underset{3}{\underline{\text{us}}}\ \underset{4}{\underline{\text{how to spin rocks across}}}$

$\underset{(4)}{\underline{\text{the lake}}}\ \underset{+}{\text{and}}\ \underset{T}{\text{that}}\ \text{was fun.}$

Patterns Containing Movables

Children of all grade levels used a variety of movables, placing them at various points in the structural patterns and with various groupings of slots. Movables, as the term is used in this study, are expressions of place, manner, time, and cause which can usually, though not always, be placed at different points in a phonological unit. Some of the more frequently used patterns appear in Table 15.

The children used a movable of place, M_1, with the subject and verb slots in 213 instances in Grade 1 and in 195 instances in Grade 6. Examples of this use of expressions of place follow:

$\underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{may go}}}\ \underset{M_1}{\underline{\text{to summer school}}}.$

$\underset{1}{\underline{\text{He}}}\ \underset{2}{\underline{\text{works}}}\ \underset{M_1}{\underline{\text{in the School of Business}}}.$

TABLE 10. FREQUENCY OF OCCURRENCE OF BASIC PATTERNS INCLUDING MODIFIERS IN GRADES 1 AND 6

Structural pattern	Grade 1	Grade 6
1 2 M_1	77	30
1 2 M_1 = T	61	50
T 1 2 M_1	45	36
T 1 2 M_1 = T	30	40
1 2 M_1 T	7	14
Total	210	180
1 2 M_2	35	17
T 1 2 M_2	30	24
1 2 M_2 = T	6	40
T 1 2 M_2 = T	9	17
Total	70	80
1 2 M_3	29	9
T 1 2 M_3 = T	6	10
1 2 M_3 = T	6	10
T 1 2 M_3	5	9
1 2 M_3 T	4	8
Total	54	46
M_3 1 2 M_1 = T	17	
M_3 1 2 M_1	16	
T M_3 1 2 M_1	16	15
T M_3 1 2 M_1 T	11	
Total	56	15
1 2 M_1 M_3	10	-
Total	10	
1 2b M_1	11	6
T 1 2b M_1 = T	7	14
1 2b M_1 T	3	5
1 2b M_1 = T	4	5
T 1 2b M_1 T	3	8
T 1 2b 4	7	
Total	36	37
1 2 4 M_1	30	24
1 2 4 M_1 = T	25	27
T 1 2 4 M_1	28	33
T 1 2 4 M_1 = T	30	31
1 2 4 M_1 T	9	6
T 1 2 4 M_1 T	1	4
Total	118	118
1 2 4 M_2	18	20
T 1 2 4 M_2	24	23
1 2 4 M_2 T	3	15
1 2 4 M_2 = T	4	6
T 1 2 4 M_2 = T	9	7
T 1 2 4 M_2 T	3	9
Total	63	66
1 2 4 M_3	30	28
T 1 2 4 M_3	13	18
1 2 4 M_3 = T	13	13
T 1 2 4 M_3 = T	4	9
T 1 2 4 M_3 T	6	3
Total	66	71
M_3 1 2 4	46	31
M_3 1 2 4 = T	35	30
T M_3 1 2 4	28	30
T M_3 1 2 4 = T	19	25
Total	128	116
1 2 4 M_4	10	11
T 1 2 4 M_4	3	6
T 1 2 4 M_4 = T	3	4
Total	17	21

I usually go downtown sometimes $\underset{T}{\text{and}}$ $\underset{1}{\underline{\text{we}}}$ $\underset{2}{\underline{\text{mess around}}}$ $\underset{M_1}{\underline{\text{down there}}}$.

Elements denoting manner or "how" were combined with subject and verb in 79 cases in Grade 1 and in 84 cases in Grade 6. For example:

I keep mine on the bed $\underset{T}{\text{and}}$ $\underset{1}{\underline{\text{they}}}$ $\underset{2}{\underline{\text{play}}}$ $\underset{M_2}{\underline{\text{with theirs}}}$.

$\underset{1}{\underline{\text{and Willy}}}$ $\underset{2}{\underline{\text{had to hide}}}$ $\underset{M_2}{\underline{\text{real quick}}}$ $\underset{+}{\text{and}}$ $\underset{1}{\underline{\text{he}}}$ $\underset{2}{\underline{\text{came up}}}$ $\underset{M_2}{\underline{\text{like that}}}$.

The children in first grade combined both M_1 and M_2 (moveables of place and manner) with subject and verb in a number of phonological units, producing such examples as:

$\underset{1}{\underline{\text{We}}}$ $\underset{2}{\underline{\text{went}}}$ $\underset{M_1}{\underline{\text{back home}}}$ $\underset{M_2}{\underline{\text{on a bus}}}$.

The pattern 1 2 M_3 (moveable denoting time) occurred 27 times in the sample of first grade speech and 48 times in the sixth grade sample. Examples include:

$\underset{1}{\underline{\text{I}}}$ $\underset{2}{\underline{\text{stayed up}}}$ $\underset{M_3}{\underline{\text{until almost one o'clock}}}$.

$\underset{1}{\underline{\text{Dad}}}$'$\underset{2}{\underline{\text{s gone}}}$ $\underset{M_3}{\underline{\text{most of the time}}}$ $\underset{+}{\text{and}}$ $\underset{T}{\text{he}}$ sells windows and doors and

stuff.

Examples of the M_3 1 2 M_1 pattern appeared at both levels, 17 times in Grade 1 and 45 times in Grade 6.

$\underset{M_3}{\underline{\text{On Sunday}}}$ $\underset{1}{\underline{\text{we}}}$ $\underset{2}{\underline{\text{went}}}$ $\underset{M_1}{\underline{\text{over to my cousin's}}}$.

$\underset{M_3}{\underline{\text{Last year}}}$ $\underset{1}{\underline{\text{we}}}$ $\underset{2}{\underline{\text{were going}}}$ $\underset{M_1}{\underline{\text{to Wyandotte Cave in southern Indiana}}}$

$\underset{+}{\text{but}}$ $\underset{T}{\text{we}}$ never got to go.

The moveable of place, M_1, was the only moveable the children combined to any extent with a 2b verb. Some examples taken from among the 11 in the first grade sample and the 33 in the sixth grade sample are:

$\underset{1}{\underline{\text{My grandmother}}}\ \underset{2b}{\underline{\text{is}}}\ \underset{M_1}{\underline{\text{down there}}}.$

$\underset{1}{\underline{\text{His brother}}}\ \underset{2b}{\underline{\text{was}}}\ \underset{M_1}{\underline{\text{in jail}}}\ \underset{+}{\text{and}}\ \underset{T}{\text{his}}\ \text{sister was some place.}$

The 1 2 4 pattern occurred a number of times with each of four movables--M_1, place; M_2, manner; M_3, time; and M_4, cause. Such examples as the following were found in the samples. Examples of 1 2 4 M_1 are:

$\underset{1}{\underline{\text{He}}}\ \underset{2}{\underline{\text{got}}}\ \underset{4}{\underline{\text{it}}}\ \underset{M_1}{\underline{\text{at RCA}}}.$

$\text{Along comes another little ant}\ \underset{T}{\text{and}}\ \underset{1}{\underline{\text{we}}}\ \underset{2}{\underline{\text{put}}}\ \underset{4}{\underline{\text{it}}}\ \underset{M_1}{\underline{\text{in the jar}}}$

$\underset{+}{\text{and}}\ \underset{T}{\text{it}}\ \text{gets loose.}$

$\underset{1}{\underline{\text{It}}}\ \underset{2}{\underline{\text{has}}}\ \underset{4}{\underline{\text{Paul Revere}}}\ \underset{M_1}{\underline{\text{in it}}}\ \underset{+}{\text{and}}\ \underset{T}{\text{it's}}\ \text{Johnny Tremain and it has}$

the redcoats and Johnny Tremain.

The pattern 1 2 4 M_2 and its variations appeared 53 times in Grade 1 and 54 times in Grade 6. Examples of 1 2 4 M_2 are:

$\underset{1}{\underline{\text{Mommy}}}\ \underset{2}{\underline{\text{knows}}}\ \underset{4}{\underline{\text{him}}}\ \underset{M_2}{\underline{\text{real well}}}.$

$\text{He goes and helps people if they're in}\ \underset{T}{\text{trouble,}}\ \underset{1}{\underline{\text{he}}}\ \underset{2}{\underline{\text{helps}}}\ \underset{4}{\underline{\text{them}}},$

$\underset{M_2}{\underline{\text{like if somebody's lost}}},\ \underset{T}{\text{he}}\ \text{goes and finds them.}$

$\underset{1}{\underline{\text{It}}}\ \underset{M_2}{\underline{\text{really}}}\ \underset{2}{\underline{\text{tells}}}\ \underset{4}{\underline{\text{a lot about a rattlesnake}}}.$

The M_3 appeared at several points in phonological units. Examples of 1 2 4 M_3 are:

$\underset{1}{\underline{\text{I}}}\ \underset{2}{\underline{\text{play}}}\ \underset{4}{\underline{\text{Little League ball}}}\ \underset{M_3}{\underline{\text{in the summer}}}.$

$\underset{M_3}{\underline{\text{Lots of times}}}\ \underset{1}{\underline{\text{we}}}\ \underset{2}{\underline{\text{play}}}\ \underset{4}{\underline{\text{cowboys and Indians}}}\ \underset{+}{\text{and}}\ \underset{T}{\text{then}}\ \text{we stop.}$

$\underset{1}{\underline{\text{I}}}$ $\underset{2}{\underline{\text{don't blame}}}$ $\underset{4}{\underline{\text{her}}}$ $\underset{M_3}{\underline{\text{during this hot weather}}}$.

$\underset{1}{\underline{\text{We}}}$ $\underset{2}{\underline{\text{opened}}}$ $\underset{4}{\underline{\text{our gifts}}}$ $\underset{M_3}{\underline{\text{before we left}}}$ $\underset{+\ T}{\text{and we had big steaks.}}$

The movable M_4 was less used than the other movables. Examples of 1 2 4 M_4 are:

$\underset{1}{\underline{\text{I}}}$ $\underset{2}{\underline{\text{can't remember}}}$ $\underset{4}{\underline{\text{them}}}$ $\underset{M_4}{\underline{\text{because I didn't even see them}}}$.

$\underset{1}{\underline{\text{He}}}$ $\underset{2}{\underline{\text{can do}}}$ $\underset{4}{\underline{\text{a lot of tricks}}}$ $\underset{M_4}{\underline{\text{if he wants to}}}$.

$\underset{T}{\text{We put the fence posts in and}}$ $\underset{1}{\underline{\text{I}}}$ $\underset{2}{\underline{\text{hold}}}$ $\underset{4}{\underline{\text{the fence posts}}}$ $\underset{M_4}{\underline{\text{so daddy}}}$

$\underset{(M_4)}{\underline{\text{can put the dirt in}}}$ $\underset{+\ T}{\text{and it won't move around.}}$

Types of Fillers (*Phrase Structure*) of *Some Syntactic Units*

Utilizing the slots and movables designated through analysis on Level I, a comparative study was made of the speech of a sub-sample of 30 children, selected at random, 15 from the middle group of Grade 1 and 15 from the middle group of Grade 5. This study was designed to determine whether it was possible to detect growth from level to level in the maturity of children's use of language through attention to the fillers children used in the syntactic units.

Fillers of *Slot* 1

The fillers of this slot might have any one of several shapes. The shapes of these fillers and examples of each are portrayed for each of the two grades. Examples for Grade 1 appear in each instance in the left-hand column and those for Grade 5 in the right-hand column.

Grade 1	Grade 5

1. A noun or a pronoun nucleus, which may include a determiner and a qualifier for each noun:

I, you, she	I, you, he, it, they
My daddy	Some wood
These two fish	His real name

2. A noun nucleus and a satellite (a noun modifier or nouns and modifiers):

   A great big kid
   My sister and my brother

   The youngest brother
   The bear cubs and the dogs

3. A noun nucleus and a noun satellite group (sg):

   My sister next to you

   The propeller on the big airplane

4. A noun phrase modified by a subject-predicate satellite. (ss):

   This parcel he made
   Everybody sees them

   This girl that he is talking to over there
   The way we rotated them
   The guy that makes an out and the guy that is on base

The simpler patterns (Type 1, above), many of which contained a determiner, a qualifier, and a noun, were of frequent occurrence, actually more frequent at Grade 1 than at Grade 5. A number of the Slot 1 fillers were of more complicated structure, as is true of those which appear as examples of Type 4, above. These were analyzed on Level II to determine the basic structure of the filler.

From this relatively small sample of children's speech (750 phonological units or sentences) two generalizations appear tenable: (1) the great majority of the (sg) forms used by first graders consisted either of nouns or noun groups; and (2) fifth graders used many more of the expanded and elaborated possibilities of Slot 1 than did first graders. There are, however, other possibilities of Slot 1 that were used by neither group--such possibilities as the use of adjectives, adverbs, infinitives, and the like, in this position. Though it is possible that children could make some use of these forms, they did not do so within this sample.

Fillers of Slot 2

English non-auxiliary verbs are categorized as transitive, intransitive, and copulative. In this study, transitive and intransitive verbs were labeled 2 and handled similarly on Level I, while copulative verbs, because of their different syntactic behavior, were labeled 2b in Level I analysis. Verbs such as be, become, feel, remain, look, get, and taste fell into this category. Some verbs are capable of operating in each of the three categories, as are the verbs turn and blow.

Fillers of several shapes were possible in Slot 2; all were marked, in Level II analysis, with the symbols v(sg). These are the common shapes, together with examples of each from the speech samples of the two grades. In some instances, adverbs appeared between the last auxiliary and the main verb.

Grade 1	Grade 5
1. One, two, or three auxiliaries with a verb:	
may go	have heard
don't know	am going to ride
could have made	have been always trying
will be able to buy	doesn't exactly think
was supposed to go	could just bend
2. Two or more verbs combined coordinately as compound verbs:	
ran and jumped	went and fixed
3. Verb patterns which incorporate prepositions and infinitive forms within the structural pattern:	
are coming up and working	go on and swim
came in and scored	would walk off and leave
don't have to go	has to take care of

The fillers of Slot 2 in the samples for Grades 1 and 5 look very much alike, though there are some indications of advancement at the Grade 5 level. A noteworthy difference is the use of adverbs between the last auxiliary and the main verb. In this sample, first graders rarely used the adverb in this position, while it was found rather frequently in the speech of fifth graders.

Fillers of Slots 3 and 4

In the plan of analysis used in this study, Slot 3 exists only when there are two objects in a sentence. If a sentence has only one object it is considered to belong to Slot 4, even though that same element in a sentence with two objects might be marked Slot 3. Thus, in the sentence "We elected him president," the him president is marked 4 since president is a complement of him. Also, differentiation is made between the complement of a copulative verb, 2b, and an object of a verb, 2.

There were only two types of fillers for Slot 3: (a) a noun or a pronoun, and (b) a noun phrase which might be a combination of an adjective (a determiner) and a noun, as in the sentences:

John gave him a book.

Mommy baked my little brother a birthday cake.

There were a number of types of fillers for Slot 4. Their shapes and examples follow:

Grade 1	Grade 5
1. A noun preceded by a determiner, a qualifier, or both:	
this little bank	too many trips
some Easter eggs	some coffee
both cars	them all
2. A noun phrase plus of and another noun phrase:	
a lot of fun	a whole bunch of dogs
half of mine	sort of a 'gurgling
a piece of ice	about thirty feet of string
3. A noun phrase plus and and another noun phrase:	
a coal train and a boxcar	this one and that one
a ball and stuff like that	a camp and a fireplace
4. Like plus an infinitive and a noun phrase:	
like to start in playing ball	like to stay and go swimming
like to come to the mother's party	like to hunt mushrooms and catch snakes
5. The satellite phrase group, ss, or the satellite clause group, sg:	
what he was saying	where my sister lives
a worm that long	what we are studying in health
the one who gave us all those troubles	like a funny kind of rock that had holes in it
6. A noun phrase plus a preposition and another noun phrase:	
(None in Grade 1 sample)	keep walking on out
	remember looking over the forest

Students of English syntax have recognized 13 possibilities for fillers of Slot 4 (without Slot 3). First graders in the study used six of these and fifth graders used all of these six plus five others. Two of the possibilities for fillers did not appear at all. One notable fact is that children appeared unable to use a variety of fillers for Slot 4 when Slot 3 was also present. It is also interesting to note that, in this corpus, first graders used more qualifiers in Slot 4 than did fifth graders.

Fillers of Slot 5

Complements of copulative verbs, 2b, differ from objects of transitive and intransitive verbs, 2, and are placed in a separate category, which is designated Slot 5. The 2b verb class includes more than 14 verbs, of which the different inflected forms of be and look are most heavily used. Complements which are used in relation to these verbs fall into six classifications.

1. Nouns or noun phrases containing a determiner, a qualifier, or both:

Grade 1	Grade 5
good rabbit dog	a woman preacher
a motorcycle	my best girl friend

2. Adjectives and adverbs:

warm	quite right
not good	so big
half and half	interesting
just exciting	real hard to hit

3. Structures with prepositions (exocentric phrases):

about to come off	on a vacation
for the robins	about majors on television
in the same kind of fight	for the other school

4. Structures with of, than, or, as, etc.:

one of our neighbors	sort of stupid
higher than the other	some cooking equipment and stuff
	bigger than almost anyone in his time
	turning into a dog

5. Clauses:

why he been working so much	what my brother looked at through a microscope
something you can walk out on	someone that was a friend of Tom Sawyer
the same size as the one he missed	when you get hit like this

Children in the Grade 1 sample used over nine types of fillers in Slot 5, while those in Grade 5 used these nine and four other types. The corpus of fifth grade speech contained many fillers that indicated growth above the first grade level. The heavy use of long and compound subject-predicate forms was one of the major differences between the speech of first and fifth graders. This appears to be significant evidence of language development.

Fillers of Movable 1 or M_1

M_1 is an expression of place and may appear in two forms: (a) a word or word group (phrase), and (b) a clause. Within the recorded speech of 30 children of Grades 1 and 5, the M_1 types and examples which follow were found:

Grade 1	Grade 5
in there	in the basement
to my grandmother's farm	on the Alaska side
over here in our yard	right behind him in his car
where they are supposed to play	the place which is beautiful
	the corner where I stood first

So far as type and frequency of use of the M_1 was concerned, there was no material difference between the two grades. All of the children appeared able to use M_1 in varying forms and locations and to do so at will.

Fillers of Movable 2 or M_2

M_2 is the thus/so expression, the expression of manner. It rarely appears in the shape of a clause; it is usually in the form of a word or phrase, without a main verb. Single words predominate in qualifier or adverb form, though occasionally one finds a preposition plus a noun phrase.

Grade 1	Grade 5
just	just
yet	never
though	again
really	naturally, probably, mostly
with me	with the scores
with my sister and all that	except for the last part
kind of like that	just pretty soon
very good	very well
not very much	to kill for food
to get us to that woods	the best of any dog I ever had

First graders showed a considerable tendency to use with plus a noun phrase. Over 36 per cent of M_2's in the speech of first graders followed this pattern, whereas fifth graders seldom used it. It may be a sign of more advanced language development to use a compound subject in place of the with phrase, as in:

I went to school with my sister yesterday.
My sister and I went to school together yesterday.

It is also true that fifth graders used a higher per cent of their M_2's in the ---ly form than did the younger children.

Fillers of Movable 3 or M_3

M_3, the when expression, occurs both in phrase and in clause forms. Some of the fillers used were the following:

	Grade 1	Grade 5
1. Noun phrases:		
	a long time ago	a little after school
	all the time	all the time except the first
2. Preposition plus noun phrase:		
	after this summer	about two years ago
	for a long time	on the first week end
3. Adverbs:		
	sometimes	right now
	already	before
4. Subject-predicate forms:		
	when I found it	after I get back
	when my daddy was in the hospital	when he was becoming such a good dog

The major difference between the use of M_3 by children of Grades 1 and 5 lies not so much in the form of the expression as in its position in the sentence. First graders tended to put most of their time expressions in the initial position in the sentence, while fifth graders were able to place them in the initial, medial, or final position at will. Here, language development appeared to be displayed through order or position rather than through type of phrase structure.

Fillers of Movable 4 or M_4

More often than not, fillers of this movable, which is an expression related to cause or condition, are in subject-predicate form. Some of the expressions assigned to this category may seem inconsistent, yet they appear in the scheme of logic to belong here. Examples taken from the corpus are:

Grade 1	Grade 5
if Mommy'd let me	if Ray were on another school team
except when it is just a little story	because I love to watch him shoot that gun
because I can't do it	so I've come to look on them as my own

The use of M_4 is in itself evidence of a degree of language maturity. Children in the fifth grade used M_4 three times as often as children in the first grade. Also, the older children used M_4 in initial as well as final position.

Fillers of Movable 5 or M_5

In a sense, M_5 is composed of a preposition and what is potentially Slot 3, or an inner complement.

1. Mr. Brown gave $\underline{\text{his brother}}_{3}$ a book.

2. Mr. Brown gave a book $\underline{\text{to his brother}}_{5}$.

Such fillers appear as:

Grade 1	Grade 5
to him	for the rest of us
for Mother	for him

The only evidence regarding maturity which appears at this point is the fact that children, who on other criteria appeared the more mature, made more use of the form of sentence 2, above, than did less mature children.

Use of Movables and Subordination

Children at all grade levels used certain types of movable sentence segments. As might be expected, the movables denoting place and time were used more freely than movables denoting manner or cause. The M_5, a preposition plus an indirect object, was least used. Table 16 shows the frequency and per cent of use of the five types of movables in Grades 1, 2, 4, and 6 as they were identified within the total number of movables at Level I.

TABLE 16. FREQUENCY AND PER CENT OF OCCURRENCE OF FIVE TYPES OF MOVABLES IN GRADES 1, 2, 4, AND 6

Movables	Grade 1		Grade 2		Grade 4		Grade 6	
	f	Per cent	f	Per cent	f	Per cent	f	Per cent
M_1	830	34	754	31	843	37	1048	33
M_2	572	23	616	25	523	23	837	27
M_3	799	33	867	36	756	33	1055	33
M_4	132	5	145	6	121	5	154	5
M_5	76	3	59	2	42	2	92	3
Total	2409	98	2441	100	2285	100	3186	101

Analysis on Level II was designed to portray the structure of the fillers of certain slots and movables as these are described above. It will be remembered that the (sg) is a satellite group related to the subject; (ss) is a subject-predicate satellite or clause related to the subject; v(sg) denotes a verb satellite group; sg and ss are phrase and clause groups respectively, and are classified as 3, 4, or 5 on Level I; the sgv group is a satellite phrase group related to the verb; and the ssv group is a group of subject-predicate satellites of the verb. There are no outstanding differences in the use of these elements from one grade level to another, either in the number of the element used or in the proportion of children who used it in their speech sample.

Table 17 shows the frequency of use of these subordinate elements in Grades 1, 2, 4, and 6 and the proportion of the children at each level who used the element in their speech sample.

TABLE 17. PER CENT OF USE OF EACH TYPE OF SUBORDINATE ELEMENT AND PER CENT OF SAMPLE AT FOUR GRADE LEVELS USING THE SATELLITE

Type of subordination	Per cent that occurrence of satellite is of total use of subordinate elements at each grade level				Per cent of sample using the subordinate element at each grade level			
	Grade 1	Grade 2	Grade 4	Grade 6	Grade 1	Grade 2	Grade 4	Grade 6
(sg)	9.63	11.4	12.10	8.68	97.00	99.00	94.66	98.00
(ss)	.76	.74	1.20	.42	26.00	30.00	40.00	22.00
v(sg)	20.79	19.26	11.05	23.03	98.00	100.00	100.00	100.00
sg	28.51	26.30	13.15	27.06	99.00	100.00	100.00	100.00
ss	7.24	11.30	11.75	8.47	87.00	97.00	94.66	96.00
sgv_1	14.92	12.60	23.44	13.78	97.00	100.00	100.00	99.00
sgv_2	5.35	5.50	9.78	5.78	86.00	94.00	92.00	95.00
sgv_3	4.07	4.00	6.60	6.29	78.00	84.00	89.33	96.00
sgv_4	.28	.30	1.42	.57	12.00	14.00	45.33	31.00
sgv_5	1.20	1.00	1.23	1.34	39.00	40.00	37.33	51.00
ssv_1	.54	.40	.44	.38	18.00	20.00	12.00	22.00
ssv_2	.42	.70	.69	.13	18.00	24.00	24.00	8.00
ssv_3	3.83	3.50	4.32	2.24	74.00	75.00	73.33	65.00
ssv_4	2.40	3.00	2.66	1.82	48.00	64.00	58.66	61.00
ssv_5	.02	.04	.09	.01	1.00	3.00	4.00	1.00

Relationship of the Use of Language Patterns to Certain Variables

The variables studied were intelligence, verbal. non-verbal, and total, as measured by the California Short-Form Test of Mental Maturity; socio-economic level as indicated by the categories of classification of the Minnesota Scale for Paternal Occupations; and the education of each parent as it was checked by the parents on the children's data cards.

The first and sixth grades were selected for detailed comparison because they were the terminal points of the sample and represented the range of grades and ages studied.

Intelligence

The range and means of verbal intelligence, non-verbal intelligence, and total intelligence scores for Grades 1 and 6 are shown in Table 18. The means for the first grade were slightly higher than those for the sixth grade, though all fell into the upper part of the normal range. Girls were a few points higher than boys in verbal intelligence but not in the total score.

TABLE 18. MEAN AND RANGE OF VERBAL, NON-VERBAL, AND TOTAL INTELLIGENCE SCORES OF PUPILS IN GRADES 1 AND 6, ACCORDING TO SEX

Variable	Grade 1			Grade 6		
	Range	Mean		Range	Mean	
		Boys	Girls		Boys	Girls
Verbal intelligence	148-54	112.3	96.3	149-55	105.9	110.7
Non-verbal intelligence	154-79	111.2	113.4	151-39	106.3	102.8
Total intelligence	150-67	112.0	109.1	144-62	106.5	106.8

Table 19 compares the frequency of selected structural patterns used by the high, middle, and low categories of verbal intelligence for Grades 1 and 6. With few exceptions, children at both grade levels, and with low as well as high verbal intelligence, used all of the common structural patterns. The patterns containing copulative verbs were less used by children in the 89 and below category than by children in the category of above 110 in verbal intelligence.

Patterns containing movables were used fully as much and in some instances a little more by children in the lowest category. Children in the lowest category made slightly more use of the common 1 2 4 pattern than did children in the higher groups.

Similar data are given in terms of non-verbal intelligence scores in Table 20. Again there were no outstanding differences when children were regrouped on the non-verbal basis. Within this speech sample, also, the 1 2 4 pattern was used more frequently by children in the lowest group than by children with higher intelligence ratings, and a few of the more complicated arrangements and some of the patterns with copulative verbs were used more frequently by children in the upper group.

When the measures of intelligence were combined into a total intelligence score, the relationships were relatively the same. These are shown in Table 21. Small differences appeared in the use of the basic 1 2 4 combinations, the 1 2b 5 combinations, and a few of the patterns containing movables. In several instances, children in the lower group used patterns containing movables slightly more frequently than did children in the middle and higher groups.

Occupational Status

The children in the sample were classified for determination of socio-economic status through the use of the following six of the seven classifications of the Minnesota Scale for Paternal Occupations. Class IV was omitted in this study.

Class I - Professional

Class II - Semi-professional and managerial

Class III - Clerical, skilled trades, and retail business

Class V - Semi-skilled occupations, minor clerical positions, and minor business

Class VI - Slightly skilled trades

Class VII - Day laborers

The relationship of occupational status to the children's use of language patterns is shown in Tables 22 and 23. Children in the highest category made slightly less use of the common 1 2 4 pattern than did children in the lower categories but made more use of the variations of the pattern. While children in the lowest class made no use of three of the patterns containing movables, there were no outstanding differences in the distribution of use of language patterns when children were grouped according to the occupation of parents. Children in all categories made some use of nearly all of the patterns.

TABLE 19. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADES 1 AND 6 WERE CLASSIFIED ACCORDING TO VERBAL INTELLIGENCE SCORES

Structural pattern	Total frequency of use		Verbal intelligence scores											
			Grade 1						Grade 6					
	Grade 1	Grade 6	Above 110 (N = 44)		109 - 90 (N = 43)		89 - Below (N = 13)		Above 110 (N = 47)		109 - 90 (N = 35)		89 - Below (N = 18)	
			f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	301	266	107	2.43	156	3.63	38	2.92	109	2.32	103	2.94	54	3.00
T 1 2 4	183	249	81	1.84	83	1.93	19	1.46	118	2.51	84	2.40	47	2.61
1 2 4 + T	170	181	77	1.75	75	1.74	18	1.38	81	1.72	64	1.83	34	1.89
T 1 2 4 + T	115	150	64	1.45	43	1.00	8	.62	83	1.77	42	1.20	25	1.39
1 2b 5	138	118	84	1.91	45	1.05	9	.69	60	1.28	42	1.20	16	.89
T 1 2b 5	66	112	39	.89	24	.56	3	.23	58	1.23	34	.97	20	1.11
T 1 2b 5 + T	28	55	17	.39	10	.23	1	.08	25	.53	28	.80	2	.11
1 2	62	49	29	.66	30	.70	3	.23	24	.51	18	.51	7	.39
T 1 2	31	50	10	.23	14	.33	7	.54	29	.62	13	.37	8	.44
1 2 M_1 + T	61	52	32	.73	22	.51	7	.54	24	.51	21	.60	7	.39
T 1 2 M_1	45	54	17	.39	23	.53	5	.38	24	.51	16	.46	14	.78
1 2 4 M_1	30	34	16	.36	10	.23	4	.31	13	.28	14	.39	7	.39
1 2 4 M_3	29	28	15	.34	12	.28	2	.15	12	.26	10	.29	6	.33
M_3 1 2 4	42	31	20	.45	15	.35	7	.54	13	.28	12	.34	6	.33
M_3 1 2 4 + T	35	29	13	.30	14	.33	8	.62	13	.28	6	.17	10	.56
T M_3 1 2 4	26	30	12	.27	12	.28	2	.15	16	.34	6	.17	8	.44

TABLE 20. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADES 1 AND 6 WERE CLASSIFIED ACCORDING TO NON-VERBAL INTELLIGENCE SCORES

Structural pattern	Total frequency of use		Non-verbal intelligence scores											
			Grade 1						Grade 6					
	Grade 1	Grade 6	Above 110 (N = 48)		109 - 90 (N = 44)		89 - Below (N = 8)		Above 110 (N = 42)		109 - 90 (N = 38)		89 - Below (N = 20)	
			f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	301	266	131	2.73	133	3.02	37	4.63	103	2.45	108	2.84	55	2.75
T 1 2 4	183	249	107	2.23	63	1.43	13	1.63	115	2.74	86	2.26	48	2.40
1 2 4 + T	170	181	90	1.88	68	1.55	12	1.50	68	1.62	68	1.79	45	2.25
T 1 2 4 + T	115	150	59	1.23	56	1.27	0	.00	79	1.88	33	.87	38	1.90
1 2b 5	138	118	77	1.60	56	1.27	5	.63	43	1.02	49	1.29	26	1.30
T 1 2b 5	66	112	29	.60	34	.77	3	.38	45	1.07	53	1.39	14	.70
T 1 2b 5 + T	28	55	8	.17	20	.45	0	.00	25	.60	21	.55	9	.45
1 2	62	49	34	.71	23	.52	5	.63	24	.57	21	.55	4	.20
T 1 2	31	50	11	.23	16	.36	4	.50	23	.55	18	.47	9	.45
1 2 M_1 + T	61	52	28	.58	28	.64	5	.63	31	.74	16	.42	5	.25
T 1 2 M_1	45	54	22	.46	16	.36	7	.88	26	.62	14	.37	14	.70
T 1 2 M_2	39	30	12	.25	22	.50	5	.63	16	.38	8	.21	6	.30
1 2 4 M_1	30	34	18	.38	8	.18	4	.50	12	.29	15	.39	7	.35
1 2 4 M_3	29	28	21	.44	8	.18	0	.00	9	.21	11	.29	8	.40
M_3 1 2 4	42	31	25	.52	14	.32	3	.38	12	.29	13	.34	6	.30
M_3 1 2 4 + T	35	29	15	.31	18	.41	2	.25	13	.31	8	.21	8	.40
T M_3 1 2 4	26	30	20	.42	5	.11	1	.13	13	.31	11	.29	6	.30

TABLE 21. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADES 1 AND 6 WERE CLASSIFIED ACCORDING TO TOTAL INTELLIGENCE SCORES

Structural pattern	Total frequency of use		Total intelligence scores											
			Grade 1						Grade 6					
	Grade 1	Grade 6	Above 110 (N = 50)		109 - 90 (N = 42)		89 - Below (N = 8)		Above 110 (N = 42)		109 - 90 (N = 41)		89 - Below (N = 17)	
			f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	301	266	108	2.16	157	3.74	36	4.50	107	2.55	108	2.63	51	3.00
T 1 2 4	183	249	103	2.06	65	1.55	15	1.88	113	2.69	94	2.29	42	2.47
1 2 4 + T	170	181	94	1.88	68	1.62	8	1.00	70	1.67	73	1.78	38	2.24
T 1 2 4 + T	115	150	75	1.50	38	.90	2	.25	83	1.98	39	.95	28	1.65
1 2b 5	138	118	96	1.92	37	.88	5	.63	48	1.14	53	1.29	17	1.00
T 1 2b 5	66	112	43	.86	22	.52	1	.13	48	1.14	48	1.17	16	.94
T 1 2b 5 + T	28	55	15	.30	12	.29	1	.13	26	.62	25	.61	4	.24
1 2	62	49	24	.68	25	.60	3	.38	25	.60	20	.49	4	.24
T 1 2	31	50	12	.24	13	.31	6	.75	25	.60	17	.41	8	.47
1 2 M_1 + T	61	52	35	.70	21	.50	5	.63	28	.67	19	.46	5	.29
T 1 2 M_1	43	54	23	.46	15	.36	5	.63	24	.57	18	.44	12	.71
T 1 2 M_2	39	29	15	.30	17	.40	7	.88	17	.40	9	.22	3	.18
1 2 4 M_1	30	34	20	.40	6	.14	4	.50	12	.29	16	.39	6	.35
1 2 4 M_3	29	28	18	.36	11	.26	0	.00	10	.24	12	.29	6	.35
M_3 1 2 4	42	31	22	.44	15	.36	5	.63	12	.29	13	.32	6	.35
M_3 1 2 4 + T	35	29	10	.20	19	.45	6	.75	13	.31	8	.20	8	.47
T M_3 1 2 4	26	30	18	.36	6	.14	2	.25	14	.33	7	.17	9	.53

TABLE 22. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 1 WERE CLASSIFIED ACCORDING TO OCCUPATIONAL STATUS OF THE PARENTS

Structural pattern	Total frequency of use	Occupational status											
		Class I (N = 19)		Class II (N = 11)		Class III (N = 16)		Class V (N = 33)		Class VI (N = 16)		Class VII (N = 5)	
		f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	301	48	2.53	28	2.55	50	3.12	109	3.30	49	3.06	17	3.40
T 1 2 4	183	50	2.63	14	1.27	17	1.06	66	2.00	26	1.60	10	2.00
1 2 4 + T	170	31	1.63	23	2.09	21	1.31	58	1.75	29	1.61	8	1.60
T 1 2 4 + T	115	32	1.68	15	1.36	18	1.12	28	.85	19	1.18	3	.60
1 2b 5	138	31	1.63	25	2.27	27	1.68	39	1.18	14	.81	2	.40
T 1 2b 5	66	13	.68	11	1.00	6	.37	23	.70	13	.81	0	.00
T 1 2b 5 + T	28	6	.32	1	.09	1	.07	11	.33	8	.50	1	.20
1 2	62	10	.53	8	.73	11	.69	19	.57	12	.75	2	.40
T 1 2	31	2	.10	5	.45	5	.31	12	.36	5	.31	2	.40
1 2 M_1 + T	61	10	.53	8	.73	9	.56	23	.70	10	.61	1	.20
T 1 2 M_1	43	9	.47	7	.63	9	.56	14	.42	5	.31	1	.20
T 1 2 M_2	39	4	.21	3	.27	5	.31	14	.42	6	.37	7	1.40
1 2 4 M_1	30	8	.42	5	.45	3	.18	9	.27	3	.18	2	.40
1 2 4 M_3	29	5	.26			7	.44	12	.36	5	.31		
M_3 1 2 4	42	10	.53	2	.18	4	.25	20	.60	2	.12	4	.40
M_3 1 2 4 + T	35	4	.21	5	.45	2	.13	14	.42	4	.25	6	1.20
T M_3 1 2 4	26	4	.21	3	.27	4	.25	12	.36	1	.06	2	.40

TABLE 23. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 6 WERE CLASSIFIED ACCORDING TO OCCUPATIONAL STATUS OF THE PARENTS

Structural pattern	Total frequency of use	Occupational status											
		Class I (N = 14)		Class II (N = 14)		Class III (N = 16)		Class V (N = 37)		Class VI (N = 16)		Class VII (N = 3)	
		f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	266	25	1.79	31	2.14	56	3.50	106	2.86	42	2.63	6	2.00
T 1 2 4	249	38	2.71	27	1.93	40	2.50	97	2.62	45	2.81	2	.67
1 2 4 + T	181	34	2.43	21	1.50	30	1.88	59	1.59	34	2.13	3	1.00
T 1 2 4 + T	150	38	3.71	15	1.07	17	1.06	57	1.54	21	1.31	2	.67
1 2b 5	118	17	1.21	20	1.43	19	1.19	34	.92	22	1.38	6	2.00
T 1 2b 5	112	18	1.29	14	1.00	20	1.25	37	1.00	19	1.19	4	1.33
T 1 2b 5 + T	55	8	.57	6	.43	8	.50	23	.62	8	.50	2	.67
1 2	49	5	.36	5	.36	8	.50	21	.57	8	.50	2	.67
T 1 2	50	5	.36	9	.64	6	.38	19	.51	8	.50	3	1.00
1 2 M_1 + T	52	11	.79	5	.36	9	.56	17	.46	8	.50	2	.67
T 1 2 M_1	54	10	.71	7	.50	5	.31	20	.54	10	.63	2	.67
T 1 2 M_2	30	6	.43	4	.29	4	.25	9	.24	7	.44	0	.00
1 2 4 M_1	34	2	.14	5	.36	6	.38	13	.35	7	.44	1	.33
1 2 4 M_3	28	5	.36	3	.21	3	.19	12	.32	5	.31	0	.00
M_3 1 2 4	31	5	.36	1	.07	5	.31	14	.38	3	.19	3	1.00
M_3 1 2 4 + T	29	5	.36	2	.14	3	.19	12	.32	6	.38	1	.33
T M_3 1 2 4	30	5	.36	7	.50	3	.19	12	.32	3	.19	0	.00

Education of Parents

The extent of schooling of parents was conceived to be a measure of their educational attainment, and this variable was studied for its relationship to the language of their children. Seven categories of schooling were recognized and are listed below from highest to lowest:

Category 1 - Attained 18 or more years of education

Category 2 - Attended graduate school

Category 3 - Completed college

Category 4 - Attended college

Category 5 - Completed high school

Category 6 - Attended high school

Category 7 - Attended elementary school

Father's education. Information provided by the parents indicated that a disproportionate number of the fathers in the random sample of population for this study had attained a high level of education. The curve for father's education was bimodal--high in Category 1 and also in Category 6, which signified attendance at but not completion of high school. Three fathers had only elementary school education.

Children of Grade 1 whose fathers were in the lowest category of education made extensive use of the simple 1 2 4 pattern and less use of its variations. These children made slight use of the 1 2b 5 form and no use of its variations. Though the sample was small at this level, it is evident that these children were the only ones in the total of 100 subjects who omitted as many as nine of the 17 widely used patterns presented in Table 24. Children whose fathers were classified at the top and some of the intermediate categories made some use of all of the patterns.

The evidence is similar for Grade 6 (Table 25), though there was less difference in the use of patterns within the seven categories of the sixth grade sample than within the first grade sample. Here the highest and lowest categories were more nearly alike.

Mother's education. Two contrasts between the educational levels of mothers and fathers stand out. None of the mothers in the sample at either Grade 1 or Grade 6 had received only elementary school education, so Category 7 was unused. Two mothers of Grade 1 children and three mothers of Grade 6 children had received 18 or more years of schooling in contrast to 21 fathers of those in Grade 1 and 12 of those in Grade 6. The mode in this classification falls distinctly at Categories 5 and 6 of the classification scale.

TABLE 24. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 1 WERE CLASSIFIED ACCORDING TO FATHER'S EDUCATION

Structural pattern	Total frequency of use	Father's education													
		Category 1 (N = 21)		Category 2 (N = 2)		Category 3 (N = 7)		Category 4 (N = 10)		Category 5 (N = 21)		Category 6 (N = 36)		Category 7 (N = 3)	
		f	Av	f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	301	50	2.38	4	2.00	26	3.71	37	3.70	73	3.47	91	2.52	20	6.67
T 1 2 4	183	53	2.52	2	1.00	4	.57	23	2.30	32	1.52	66	1.83	3	1.00
1 2 4 + T	170	34	1.62	0	.00	12	1.71	33	3.30	38	1.81	47	1.30	6	2.00
T 1 2 4 + T	115	33	1.52	5	2.50	8	1.14	12	1.20	25	1.19	32	.89	0	.00
1 2b 5	138	33	1.52	11	5.50	15	2.14	13	1.30	41	1.95	23	.64	2	.67
T 1 2b 5	66	15	.71	2	1.00	4	.57	13	1.30	10	.47	22	.61	0	.00
T 1 2b 5 + T	28	6	.29	1	.50	0	.00	5	.50	2	.09	14	.39	0	.00
1 2	62	10	.47	0	.00	4	.57	19	1.90	8	.38	19	.53	2	.67
T 1 2	31	2	.09	1	.50	0	.00	4	.40	8	.38	16	.44	0	.00
1 2 M_1 + T	61	10	.47	4	2.00	3	.43	8	.80	19	.90	16	.44	1	.33
T 1 2 M_1	45	10	.47	1	.50	2	.28	8	.80	8	.38	15	.41	0	.00
T 1 2 M_2	39	4	.19	0	.00	2	.28	7	.70	8	.38	15	.41	3	1.00
1 2 4 M_1	30	8	.38	2	1.00	2	.28	2	.20	7	.33	7	.19	2	.67
1 2 4 M_3	29	5	.24	0	.00	2	.28	4	.40	13	.61	5	.14	0	.00
M_3 1 2 4	42	10	.47	0	.00	1	.14	4	.40	6	.28	20	.56	1	.33
M_3 1 2 4 + T	35	4	.19	1	.50	1	.14	3	.30	6	.28	20	.56	0	.00
T M_3 1 2 4	26	5	.24	1	.50	0	.00	5	.50	8	.38	7	.19	0	.00

TABLE 25. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 6 WERE CLASSIFIED ACCORDING TO FATHER'S EDUCATION

Structural pattern	Total frequency of use	Father's education													
		Category 1 (N = 12)		Category 2 (N = 3)		Category 3 (N = 8)		Category 4 (N = 15)		Category 5 (N = 18)		Category 6 (N = 40)		Category 7 (N = 4)	
		f	Av	f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	266	24	2.00	9	3.00	14	1.75	50	3.33	54	3.00	104	2.60	11	2.75
T 1 2 4	249	30	2.50	9	3.00	16	2.00	33	2.20	58	3.22	96	2.40	7	1.75
1 2 4 + T	181	16	1.33	12	4.00	12	1.50	32	2.13	34	1.89	63	1.58	12	3.00
T 1 2 4 + T	150	15	1.25	10	3.33	7	.88	22	1.47	30	1.67	52	1.30	14	3.50
1 2b 5	118	17	1.42	6	2.00	8	1.00	15	1.00	21	1.17	46	1.15	5	1.25
T 1 2b 5	112	15	1.25	3	1.00	15	1.88	16	1.07	18	1.00	43	1.08	2	.50
T 1 2b 5 + T	55	8	.67	1	.33	6	.75	7	.47	14	.78	17	.43	2	.50
1 2	49	4	.33	0	.00	2	.25	6	.40	7	.39	29	.73	1	.25
T 1 2	50	5	.42	2	.67	4	.50	4	.27	7	.39	26	.65	2	.50
1 2 M_1 + T	52	7	.58	5	1.67	6	.75	4	.27	5	.28	23	.58	2	.50
T 1 2 M_1	54	6	.50	3	1.00	3	.38	8	.53	8	.44	22	.55	4	1.00
T 1 2 M_2	30	4	.33	2	.67	1	.13	7	.47	4	.22	9	.23	3	.75
1 2 4 M_3	28	7	.58	0	.00	4	.50	3	.20	2	.11	12	.30	0	.00
M_3 1 2 4	31	2	.17	0	.00	6	.75	4	.27	7	.39	12	.30	0	.00
M_3 1 2 4 + T	29	3	.25	2	.67	2	.25	6	.40	6	.33	9	.23	1	.25
T M_3 1 2 4	30	3	.25	1	.33	5	.63	7	.47	3	.17	10	.25	1	.25

Children of both grade levels whose mothers were in Categories 5 and 6 of the educational classification indicating attendance at or completion of high school used all of the basic patterns presented in Tables 26 and 27. In contrast to this, children whose mothers fell into the two highest classifications omitted one or more of these structural patterns. The largest number of omissions appeared at Category 2, with first grade children omitting five patterns and sixth graders omitting eight. These children in the higher classifications made less use of the simple 1 2 4 pattern but more use of it in its variations.

Evidence of Significant Relationship

The statistical significance of certain relationships was computed by the use of the chi square technique. Use of this technique may be open to question because of the varying length of the phonological units used by the children and the fact that children who used fewer long sentences, and hence fewer sentence segments, used a smaller total number of patterns and repetitions of patterns. Since no other technique appeared any better than this for comparisons of significance, this technique was employed to show the relation between the use of movables and patterns of subordination and other variables.

Significant differences at the 1 per cent and 2 per cent levels, respectively, between use of movables and verbal intelligence for Grades 1 and 6 are shown in Table 28. Differences at the 2 per cent and 5 per cent levels were found for these two grades between mental age and the use of movables. Differences appeared significant for Grades 1 and 6 between father's education and mother's education and the use of movables, though the per cent of differences was reversed for the two grades. Father's education was significant at the 1 per cent level and mother's education at the 5 per cent level for Grade 1, while father's education was significant at the 5 per cent level and mother's education at the 1 per cent level for Grade 6. The only relationship which showed any significance for Grade 4 was occupational status, which proved significant at the 1 per cent level.

Comparison of the use of subordinate elements and the selected study variables provided contrasting results as indicated in Table 29.

Chronological age showed no significance for Grade 4 but significance at the 5 per cent level for Grades 1 and 6. Verbal intelligence was significant for grades 1, 4, and 6 at the 2 per cent, 5 per cent, and 2 per cent levels, respectively. Non-verbal intelligence, total intelligence, and mental age were significant at the 1 per cent level in each instance for Grades 1 and 4 but were not significant for Grade 6. Occupational status appeared related to the use of subordination at all three grade levels, with a significant difference of 5 per cent at Grades 1 and 4 and of 1 per cent at Grade 6. For father's education, significant difference was found only at Grade 1, where it appeared at the 1 per cent level, though mother's education was significant at the 1 per cent level for both Grades 1 and 6.

TABLE 26. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 1 WERE CLASSIFIED ACCORDING TO MOTHER'S EDUCATION

Structural pattern	Total frequency of use	Mother's education											
		Category 1 (N = 2)		Category 2 (N = 5)		Category 3 (N = 15)		Category 4 (N = 16)		Category 5 (N = 25)		Category 6 (N = 37)	
		f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	301	6	3.00	6	1.20	42	2.80	43	2.68	89	3.56	115	3.13
T 1 2 4	183	5	2.90	8	1.60	36	2.40	22	1.37	39	1.56	73	1.97
1 2 4 + T	170	4	2.00	3	.60	29	1.93	30	1.87	44	1.76	60	1.62
T 1 2 4 + T	115	2	1.00	4	.80	17	1.13	32	2.00	24	.96	31	.83
1 2b 5	138	2	1.00	8	1.60	27	1.80	28	1.76	42	1.68	31	.83
T 1 2b 5	66	0	.00	4	.80	9	.60	13	.81	14	.56	26	.70
T 1 2b 5 + T	28	0	.00	1	.20	5	.33	6	.37	8	.32	8	.21
1 2	62	2	1.00	0	.00	5	.33	17	1.06	18	.72	20	.54
T 1 2	31	0	.00	1	.20	4	.25	5	.31	7	.28	14	.38
1 2 M_1 + T	61	2	1.00	3	.60	10	.67	9	.56	14	.56	23	.62
T 1 2 M_1	45	1	.50	4	.80	8	.53	7	.44	12	.48	13	.35
T 1 2 M_2	39	0	.00	0	.00	4	.26	5	.31	12	.48	18	.48
1 2 4 M_1	30	1	.50	2	.40	6	.40	6	.37	2	.08	13	.35
1 2 4 M_3	29	2	1.00	0	.00	4	.26	7	.44	5	.20	11	.30
M_3 1 2 4	42	0	.00	0	.00	4	.26	10	.62	10	.40	18	.48
M_3 1 2 4 + T	35	2	1.00	0	.00	5	.33	7	.44	3	.12	18	.48
T M_3 1 2 4	26	0	.00	1	.20	5	.33	6	.37	4	.16	10	.27

TABLE 27. TOTAL AND AVERAGE FREQUENCIES OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 6 WERE CLASSIFIED ACCORDING TO MOTHER'S EDUCATION

Structural pattern	Total frequency of use	Mother's education											
		Category 1 (N = 3)		Category 2 (N = 3)		Category 3 (N = 9)		Category 4 (N = 12)		Category 5 (N = 29)		Category 6 (N = 44)	
		f	Av	f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	266	5	1.67	7	1.17	17	1.89	30	2.50	75	2.57	132	3.00
T 1 2 4	249	10	3.33	3	1.00	22	2.44	30	2.50	82	2.83	102	2.32
1 2 4 + T	181	3	1.00	4	.67	14	1.56	23	1.92	65	2.24	72	1.64
T 1 2 4 + T	150	2	.67	0	.00	11	1.22	26	2.17	53	1.83	58	1.32
1 2b 5	118	5	1.67	10	1.67	11	1.22	9	.75	32	1.10	51	1.16
T 1 2b 5	112	5	1.67	3	1.00	12	1.33	16	1.33	41	1.41	35	.80
T 1 2b 5 + T	55	3	1.00	0	.00	4	.44	5	.42	23	.79	20	.45
1 2	49	3	1.00	3	1.00	2	.22	3	.25	14	.48	24	.55
T 1 2	50	2	.67	0	.00	2	.22	8	.67	14	.48	24	.55
1 2 M_1 + T	52	2	.67	0	.00	5	.56	7	.58	13	.45	25	.57
T 1 2 M_1	54	2	.67	0	.00	8	.89	6	.50	18	.62	20	.45
T 1 2 M_2	30	4	1.33	3	1.00	1	.11	3	.25	11	.38	8	.18
1 2 4 M_3	28	3	1.00	1	.33	5	.56	4	.33	6	.21	9	.20
M_3 1 2 4	31	1	.33	0	.00	1	.11	9	.75	5	.17	15	.34
M_3 1 2 4 + T	29	0	.00	0	.00	3	.33	6	.50	12	.41	8	.18
T M_3 1 2 4	30	2	.67	0	.00	2	.22	4	.33	10	.34	12	.27

TABLE 28. SIGNIFICANT DIFFERENCES IN USE OF MOVABLES FOR SELECTED VARIABLES AT THREE GRADE LEVELS, AS EXPRESSED BY CHI SQUARE

Variable	Significant difference		
	Grade 1	Grade 4	Grade 6
Chronological age	None	None	None
Verbal intelligence	1%	None	2%
Non-verbal intelligence	None	None	None
Total intelligence	None	None	None
Mental age	2%	None	5%
Occupational status	None	1%	None
Father's education	1%	None	5%
Mother's education	5%	None	1%

TABLE 29. SIGNIFICANT DIFFERENCES IN USE OF SUBORDINATE ELEMENTS BETWEEN HIGH AND LOW QUARTERS OF THE SAMPLE FOR SELECTED VARIABLES AT THREE GRADE LEVELS, AS EXPRESSED BY CHI SQUARE

Variable	Significant difference		
	Grade 1	Grade 4	Grade 6
Chronological age	5%	None	5%
Verbal intelligence	2%	5%	2%
Non-verbal intelligence	1%	1%	None
Total intelligence	1%	1%	None
Mental age	1%	1%	None
Occupational status	5%	5%	1%
Father's education	1%	None	None
Mother's education	1%	None	1%

Summary

A number of points stand out clearly from the analysis of the 14,375 phonological units recorded for the 575 children in the sample:

1. Patterns of structure within children's oral language can be identified and described.

2. While children used a large number of patterns and combinations of patterns of structure, some basic patterns appeared with great frequency, and other patterns and combinations appeared with less frequency in the free talk of children.

3. The most used and apparently basic patterns appeared with high frequency at all grade levels.

4. Some of the phonological units used by children were short utterances.

5. Children used some sounds which were pertinent to neither the structure or the meaning of what they were uttering. These mazes could be classified as noises, holders, repeats, and edits, and served the children in their talk in spite of the lack of meaning.

6. The lengths of the phonological units used by children varied more within a grade than from grade to grade.

7. Length of phonological unit appeared in this study to be unsatisfactory as a measure of the maturity of language.

8. The number of language patterns used by children in the study ranged from 658 at Grade 1 to 1,041 at Grade 6.

9. Patterns composed of immovable elements (slots) ranked highest in frequency at each grade level.

10. Children at all grade levels made some use of movables; the movables of place and time appeared with greatest frequency.

11. Children combined both slots and movables in a wide variety of ways in composing their phonological units.

12. The fillers employed by children in the filling of the various slots and movables were of several shapes: single words, words with determiners and modifiers, phrases, clauses, and combinations of these.

13. There were few outstanding differences in the fillers used by children in Grade 1 and Grade 5.

14. The use of language patterns when children were classified according to verbal intelligence, non-verbal intelligence, and total intelligence showed few outstanding differences when frequencies of

use were compared.

15. Regrouping children according to the occupation of parents revealed no major differences in the frequency of use of the patterns studied.

16. Some differences appeared in the use of patterns when children were grouped on the basis of the education of fathers and mothers.

17. The use of the chi square technique revealed significant differences at the 1, 2, and 5 per cent levels between the use of movables and certain variables: verbal intelligence, mental age, occupational status, and parents' education at Grades 1, 4, and 6.

18. The application of the chi square technique revealed significant differences at the 1, 2, and 5 per cent levels between the use of subordination patterns and verbal intelligence, mental age, occupational status, and parents' education at Grades 1, 4, and 6. These ratings of significance differed from grade to grade.

CHAPTER III

COMPARISON OF THE ORAL LANGUAGE USED BY CHILDREN WITH THE LANGUAGE OF READING TEXTBOOKS

A question to which this research sought an answer was: Are the language patterns which children use in their speech in certain grades of the elementary school found in the reading textbooks designed for these grades? To provide an answer, four sets of widely used textbooks were selected for study. The four series of readers selected for analysis will be designated throughout this report by the names of the publishers.* Each set contained three or four preprimers, a primer, a first reader, and one or two texts for each subsequent grade through Grade 6. The search for language patterns covered the whole of each preprimer and eight pages from each of the other books in the series, from primer through the sixth grade reader. The books for four grade levels--Grades 1, 2, 4, and 6--are reported here.

The sample in each instance beyond preprimer level was selected in the following manner: the first page of text, the tenth page, the twentieth page, the fifth page on each side of the middle of the book, the twentieth page from the end, the tenth page, and the last page. The pattern for one book, which had 141 pages, ran thus: pages 6 - 16 - 26 - 66 - 76 - 121 - 131 - 141. A page that was predominantly illustration was omitted and the following page was used, so that the sample included eight full or typically full pages of text. Obviously, a sample of this size could not be depended upon to include all of the language patterns employed in the book. It is assumed that the findings are indicative, rather than actual, for the whole book.

The purpose of the search was to find which of the structural patterns most commonly used by children in Grades 1, 2, 4, and 6 appeared in the selected samples of reading materials for those grades. No effort was made to determine the frequency of appearance of the patterns, but only whether or not they appeared in the sample selected for study.

First Grade Readers

The three or four preprimers, the primer, and the first reader for each of the four selected series of readers were examined for the appearance of each of the structural patterns ranked in order from 1 to 25. Table 30 indicates that the basic 1 2 4 pattern was used in

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*See Appendix G.

TABLE 30. RANK ORDER OF STRUCTURAL PATTERNS MOST COMMONLY USED BY FIRST GRADE CHILDREN AND THE APPEARANCE OF THESE PATTERNS IN SELECTED READERS FOR GRADE 1

Rank order	Structural patterns	f	Reader series																											
			Allyn and Bacon						Ginn					Lyons and Carnahan													Scott, Foresman				
														Basic						Classmate										
			Preprimers				Primer	First reader	Preprimers			Primer	First reader	Preprimers				Primer	First reader	Preprimers				Primer	First reader	Preprimers			Primer (1^1)	First reader (1^2)
			1	2	3	Sr			1	2	3			1	2	3	4			1	2	3	4			1	2	3		
1	1 2 4	301	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X
2	T 1 2 4	183																												
3	1 2 4 + T	170																												
4	1 2b 5	138		X	X	X	X	X											X								X			X
5	T 1 2 4 + T	115																												
6	1 2 M_1	77	X					X		X			X			X	X	X	X			X	X						X	X
7	T 1 2b 5	66	X	X	X	X																								
8	1 2	62	X	X	X	X	X		X	X		X	X	X	X	X	X	X	X	X		X	X				X			X
9	1 2 M_1 + T	61																												
10	1 2 4 T	54																												
11	T 1 2 M_1	45																												
12	M_3 1 2 4	42						X										X												
13	T 1 2 M_2	39																												X
14	M_3 1 2 4 + T	35																												
15	T 1 2	31																				X								
15	T 1 2 4 T	31																												
16	1 2 4 M_1	30		X													X	X					X							
17	1 2 M_3	29																	X											
17	1 2 4 M_3	29																												
18	T 1 2b 5 + T	28																												
18	T 1 2 4 M_1	28																												
19	T 1 2 4 M_1 + T	26																												
19	T M_3 1 2 4	26																												
20	1 2 M_2	25																												
20	1 2 4 M_1 + T	25																												
20	[illegible] 2 4	25																												
21	T 1 2 4 M_2	24																												
22	T 1 2 M_1 + T	23																												
23	1 2b 5 T	19																												
23	T M_3 1 2 4 + T	19																												
24	1 2 4 M_2	18										X					X													
24	T 1 2 3 4	18																												
25	1 2 T	17																												
25	1 2 + T	17																												
25	1 2 3 4	17																												
25	M_3 1 2 M_1 + T	17																												

all of the books of the Allyn and Bacon series, the Ginn series, and the basic series of Lyons and Carnahan. The pattern did not appear in the second preprimer, primer, or first reader of the Lyons and Carnahan classmate edition or in the first preprimer of the Scott, Foresman series.

The 1 2b 5 pattern appeared in all of the Allyn and Bacon series except the first preprimer, not at all in the Ginn series, in only the fourth preprimer and in the first reader of the basic Lyons and Carnahan series, but not at all in the classmate edition, and in only the second preprimer and first reader of the Scott, Foresman series. The 1 2b 5 pattern preceded by another structural unit was used in the four preprimers of the Allyn and Bacon series but did not appear in the sample for the primer and first reader. Nor did it appear in any of the first grade books of the other series.

The 1 2 pattern appeared in all of the preprimers and in the primer of the Allyn and Bacon series but not in the sample that was examined of the first reader. The pattern did not appear in the third preprimer of the Ginn series, though it did in each of the other first grade books. The 1 2 pattern appeared in all of the books of the Lyons and Carnahan basic series but only in the first, third, and fourth preprimers of the classmate series. In the Scott, Foresman series it appeared in only the second preprimer and the first reader.

There were a few scattered uses of movables with these basic patterns, but only a few. Almost all of these were movables of place. Little or no use was made of the basic patterns in sentences in which these patterns were preceded or followed by other patterns. Short sentences, which predominated in all preprimers and to some extent in primers and first readers, precluded the use of these expansions which children used very commonly in their speech. The conjunction and appeared early in the preprimers of all four of the series. It was used to link together coordinate nouns, as in "See Tom and Betty work," or to coordinate verbs, as in "Come and see Mother." The preposition with appeared in the first preprimer in one series in the sentence, "Skip plays with Billy," and in another series for appeared in the much more difficult sentence, "Here is something for you, Linda." In general, words which could express relationship between ideas and point the way to the use of subordination, words such as but, who, where, what, as, and so, began to appear in the third preprimer in one series but not until the first reader in another series.

Second Grade Readers

The picture of the use of common structural patterns in the samples from readers at second grade level was a spotted one, as shown by Table 31. The only pattern that appeared in all the readers was the 1 2 4 pattern. Though the 1 2b 5 pattern appeared in all of the first grade books of the Allyn and Bacon series except the first preprimer, this pattern did not appear at all in the second grade sample.

TABLE 31. RANK ORDER OF STRUCTURAL PATTERNS MOST COMMONLY USED BY SECOND GRADE CHILDREN AND THE APPEARANCE OF THESE PATTERNS IN SELECTED READERS FOR GRADE 2

Rank order	Structural patterns	f	Allyn and Bacon		Ginn		Lyons and Carnahan				Scott, Foresman	
							Basic		Classmate			
			2^1	2^2	2^1	2^2	2^1	2^2	2^1	2^2	2^1	2^2
1	1 2 4	309	X	X	X	X	X	X	X	X	X	X
2	T 1 2 4	264	X								X	
3	1 2 4 + T	189				X					X	
4	1 2b 5	130				X	X	X		X	X	X
5	T 1 2b 5	107					X					
6	T 1 2 4 + T	74										
7	M_3 1 2 4	71			X		X	X			X	
8	1 2b 5 + T	57									X	
9	M_3 1 2 4 + T	52										
10	1 2	48			X	X			X	X		
11	1 2 M_1 + T	43						X				
12	1 2 + T	42										
13	T 1 2 M_1	38						X				
14	1 2 4 T	37	X									
14	T 1 2 4 M_1	37									X	
15	T 1 2	36										
16	1 2 M_1	34	X	X	X	X	X	X	X	X		X
17	T 1 2 M_2	32								X		
17	1 2 M_2	32	X		X	X	X	X	X		X	X
18	1 2 4 M_1	31		X	X	X	X	X	X	X	X	X
19	T 1 2 4 M_2	29								X		
20	M_3 1 2 M_1 + T	28										
21	M_3 1 2 + T	27										
22	T 1 2b 5 + T	25										
23	T M_3 1 2 4	23										
23	1 2 3 4	23										
24	T 1 2 4 T	22										
24	1 2 4 M_2	22	X		X							
25	1 2 4 M_1 + T	21									X	

It appeared in the advanced reader in the Ginn series, in both of the books of the Lyons and Carnahan basic series but only in the second book of the classmate series, and in both books of the Scott, Foresman series. The simple 1 2 pattern, which was used in most of the books at first grade level, appeared in only four of those at the second grade level; however, it was used with movables of place and manner in nearly all of the books.

In several books the basic 1 2 4 pattern appeared in phonological units which combined it with other structural segments. It was also elaborated in some instances by the addition of movables of place and manner.

In general, there appeared to be little increase in the number of sentence patterns used in Grade 2 as compared with those used in Grade 1. An occasional sentence began with so or a movable composed of one or only a few words. Most sentences still contained only one segment, though there were a few longer ones. It appeared that stories which were old folk or fairy tales retold were couched in sentences of greater variety and length than the sentences in stories of contemporary boys and girls. Almost no use was made of movables of time, and there were none of the M_4 movables of cause or condition.

Fourth Grade Readers

In each of the four series of books, more of the basic patterns appeared in the fourth grade samples studied than in the second grade samples. According to Table 32, the Allyn and Bacon book used 15 commonly used patterns in the selected sample; the Ginn book used 11 of the patterns; the Lyons and Carnahan books used 11 of the patterns in the basic book and 8 in the classmate book; the first of the Scott, Foresman fourth grade readers used 13 of the patterns in the sample studied, and the second of the fourth grade readers used 12 of them.

In the Allyn and Bacon books, almost all of the patterns that appeared in the books of Grade 2 appeared also in the sample for Grade 4. In the Ginn series, the Grade 4 sample used all but one of the Grade 2 patterns and added six others. The regular basic edition of the Lyons and Carnahan series omitted three patterns used in the Grade 2 sample but added four others. The classmate edition of this series omitted in its Grade 4 sample three patterns which appeared in the Grade 2 sample but added three other patterns. The Scott, Foresman books for Grade 4 omitted two patterns used in the Grade 2 sample but added two others.

Practically all of the patterns which appeared in the Grade 4 but not the Grade 2 sample were elaborations represented by movables or expansions made by the addition of segments. Once a pattern had been added, it could not be depended upon to recur, but there was a high degree of recurrence in all series.

TABLE 32. RANK ORDER OF STRUCTURAL PATTERNS MOST COMMONLY USED BY FOURTH GRADE CHILDREN AND THE APPEARANCE OF THESE PATTERNS IN SELECTED READERS FOR GRADE 4

Rank order	Structural patterns	f	Allyn and Bacon	Ginn	Lyons and Carnahan		Scott, Foresman	
					Basic	Classmate	4^1	4^2
1	1 2 4	202	X	X	X	X	X	X
2	T 1 2 4	156					X	X
3	1 2 4 + T	123	X				X	X
4	1 2b 5	108	X	X	X	X	X	X
5	T 1 2 4 + T	84						
6	1 2 4 T	64						
7	T 1 2b 5	63	X	X	X			X
8	1 2 M_1 + T	51					X	
9	T 1 2 M_1	41						
9	T 1 2 4 T	41						
10	1 2 M_1	37	X	X	X	X	X	X
11	T M_3 1 2 4 + T	33						
12	1 2b 5 + T	31	X	X	X			X
13	T 1 2	29						
13	M_3 1 2 4	29	X	X	X	X	X	X
14	M_3 1 2 4 + T	28	X					
14	1 2 4 M_1	28	X	X	X	X	X	X
15	1 2 4 M_2	27	X		X	X	X	
16	T M_3 1 2 4	26		X				
17	T 1 2 4 M_1 + T	25						
17	T 1 2 M_2	25						
17	M_3 1 2 M_1	25	X		X			X
18	1 2	23			X		X	
18	T 1 2 4 M_1	23		X			X	
18	T 1 2 + T	23						
19	1 2 M_2	22	X		X	X	X	X
19	T 1 2b 5 + T	22						
20	1 2 4 M_3	21		X				
20	T 1 2 4 M_2	21	X					X
21	M_3 1 2 M_1 + T	19						
21	T 2 4	19					X	
22	1 2 M_1 T	18						
23	1 2 T	17	X					
23	1 2 M_2 + T	17						
23	1 2 4 M_1 + T	17						
24	1 2 3 4	15		X		X		
24	T M_3 1 2 M_1	15						
25	T ≠ 1 2 4	14	X					

Sixth Grade Readers

Since all of the readers selected for study at the sixth grade level are longer books and contain more pages than do the books for earlier grades, an eight-page sample is obviously a smaller sample in proportion to the total than are the samples at other levels. But, because the pages are longer and less broken by illustration, they contain more sentences of text than do pages in the earlier books. Consequently, the eight selected pages are deemed an adequate sample of text for the purpose of this study.

Table 33 shows the structural patterns most frequently used by sixth grade children and their appearance in sixth grade readers. Of the 31 patterns that ranked highest in the speech sample at this grade level, 16 appeared in the eight-page sample of the Allyn and Bacon book selected for study. The Grade 6 sample from the Ginn book used nine of the patterns, two less than appeared in the Grade 4 book. The basic book of Lyons and Carnahan used 12 of the 31 patterns in the sample studied, and the classmate edition used 10 of the patterns. In the sample selected from the two books of the Scott, Foresman series, 11 patterns appeared in the 6^1 book and 9 in the 6^2 book. The basic 1 2 4 and 1 2b 5 patterns were found in the selected samples of all the series. Enough examples appeared to warrant the statement that these basic patterns were used to some extent with movables and in elaborated patterns within phonological units. However, only one such pattern, M_3 1 2 4, was found in all of the samples.

The samples taken from sixth grade readers showed marked differences in the per cent of sentence patterns having more than one segment. These are shown below:

Publisher	Per cent
Allyn and Bacon	51.11
Ginn	35.48
Lyons and Carnahan	
Basic	14.75
Classmate	4.65
Scott, Foresman	
6^1	32.14
6^2	18.88

Some of the samples, particularly that from Allyn and Bacon, showed a variety of sentence patterns, some with two or more structural segments and a variety of constructions within the slots. Also included in this sample were various types of movables constructed in a variety of ways. The Ginn book used a number of sentences beginning with Slot 4--a construction which seldom occurs in oral language but which may have been used in the written language in the interest of style. There was in this sample little variety in construction or length in subject slots. The Lyons and Carnahan basic book used a movable at the beginning of the sentence far more frequently than did the companion book. The basic book used a variety of constructions

TABLE 33. RANK ORDER OF STRUCTURAL PATTERNS MOST COMMONLY USED BY SIXTH GRADE CHILDREN AND THE APPEARANCE OF THESE PATTERNS IN SELECTED READERS FOR GRADE 6

Rank order	Structural patterns	f	Allyn and Bacon	Ginn	Lyons and Carnahan		Scott, Foresman	
					Basic	Class-mate	6^1	6^2
1	1 2 4	266	X	X	X	X	X	X
2	T 1 2 4	249	X	X	X		X	X
3	1 2 4 + T	181	X	X			X	X
4	T 1 2 4 + T	150						
5	1 2b 5	118	X	X	X	X	X	X
6	T 1 2b 5	112	X		X	X	X	
7	1 2 4 T	74	X					
8	1 2b 5 + T	57	X	X	X		X	
9	T 1 2b 5 + T	55						
10	T 1 2 M_1	54			X			X
11	1 2 M_1 + T	52	X					
12	T 1 2	50			X		X	
13	1 2	49	X	X		X		
14	T 1 2 4 T	48						
15	T 1 2 M_1 + T	42						
16	1 2b 5 T	35			X	X		
17	1 2 4 M_1	34	X	X	X	X		
18	1 2 M_1	33	X		X	X	X	X
19	1 2 T	31						
19	M_3 1 2 4	31	X	X	X	X	X	X
20	T M_3 1 2 4	30					X	
20	T 1 2 M_2	30						
21	1 2 4 M_2	29			X	X	X	
21	M_3 1 2 4 + T	29						
22	1 2 4 M_3	28	X			X		X
22	T 1 2 + T	28	X					
23	1 2 + T	27	X					X
23	1 2 4 M_1 + T	27		X				
24	T 1 2 3 4	26						
25	T M_3 1 2 4 + T	25						
25	T 1 2 4 M_2	25	X					

within the slots, as children seem normally to do, whereas the companion book used little variety or complexity. The language of the companion book appeared to differ greatly from the language of even slow sixth grade children, a fact which would make it appear that sentence structure was of less concern to the authors than was vocabulary control. Research is needed regarding the effect of sentence structure on ease of reading. Some of the patterns which appeared in both books 6^1 and 6^2 of the Scott, Foresman series were patterns seldom used by children in their oral language. There was considerable variety in the use of language patterns in these books.

Summary

Few generalizations are possible on the basis of this study of sample pages taken from four widely used sets of readers. These statements appear defensible:

1. The basic 1 2 4 pattern was the only language pattern to appear in the samples taken from practically all of the books.

2. Other basic patterns appeared from level to level within a series of books in what seemed a random manner.

3. There was some evidence of expansion from level to level in each series in the use of elaborated patterns within phonological units.

4. Some movables appeared in the patterns used in each series of books, beginning at about second grade level.

5. There was no clear arrangement for the introduction of elements of subordination in any of the series.

6. The patterns which appeared in the sample differed from series to series and from book to book within a single series.

7. Patterns of sentence structure appeared to be introduced somewhat at random.

8. A pattern of structure, once introduced, seemed not to be followed up with further elements of the same or similar sort. Thus there seemed to have been no provision for the development of mastery of patterns of structure through repetition.

9. There appeared to be no scheme for the development of control over sentence structure which paralleled the generally accepted scheme for the development of control over vocabulary.

CHAPTER IV

RELATIONSHIP OF LANGUAGE TO READING AND LISTENING AT SIXTH GRADE AND TO READING AT SECOND GRADE

A major hypothesis on which this study was based was that relationship exists between the language used by children and the skill they demonstrate in learning to read. It proved impossible within the limitations of the study to investigate this hypothesis at all grade levels, but detailed study of reading was conducted in Grade 6 and to a lesser extent in Grade 2. Listening was also considered in Grade 6.

Sixth Grade Study

The sixth grade was selected for special study of the relationship between children's oral language and the variables of silent reading comprehension, oral reading interpretation, and listening comprehension. Silent reading comprehension was measured by the subtest on paragraph meaning of the Stanford Achievement Test, Intermediate Level, Form L.* The test was administered in the regular classroom to all children and the tests of the experimental group withdrawn for special study. Oral reading interpretation was measured by the oral part of Section IV, Form A, Grades 1 to 8, of the Diagnostic Reading Tests.* This test was administered individually to the children in the experimental group and the oral reading was recorded on tape. Listening comprehension of this group was measured by a listening test devised and tested by Marten.* Selections were played to the children from tapes, and written questions were answered on a test sheet. This was done in group situations.

Silent Reading Comprehension

When the raw scores obtained on the silent reading test were translated into grade placement scores, 22 children were found to score 5.6 or below and 22 children scored 9.2 or above. The high group included 8 boys and 14 girls, whereas the low group included 16 boys and 6 girls. These were the high and low groups in silent reading comprehension. The relationship of the grade placement scores to the use of selected language patterns is shown in Table 34. While the lowest group made slightly more use of the simple 1 2 4 pattern, the high group was almost consistently higher in its use of all other patterns in the selected list.

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*See Appendix B.

TABLE 34. TOTAL AND AVERAGE FREQUENCY OF USE OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 6 WERE CLASSIFIED ACCORDING TO SILENT READING COMPREHENSION

Structural pattern	Total frequency of use	Silent reading comprehension grade placement scores									
		10.9 - 9.2 (N = 22)		9.1 - 8.1 (N = 13)		8.0 - 6.1 (N = 29)		6.0 - 5.7 (N = 14)		5.6 - 3.6 (N = 22)	
		f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	266	52	2.36	38	2.92	75	2.59	43	3.07	58	2.64
T 1 2 4	249	61	2.77	33	2.54	65	2.24	37	2.64	53	2.41
1 2 4 + T	181	30	1.36	30	2.31	51	1.76	36	2.57	34	1.55
T 1 2 4 + T	150	33	1.50	17	1.31	48	1.66	23	1.64	29	1.32
1 2b 5	118	27	1.23	14	1.08	37	1.28	14	1.00	26	1.18
T 1 2b 5	112	25	1.14	22	1.69	29	1.00	15	1.07	21	.95
T 1 2b 5 + T	55	18	.82	6	.46	10	.34	15	1.07	6	.27
1 2	49	11	.50	7	.54	15	.52	10	.71	6	.27
T 1 2	50	15	.68	5	.38	14	.48	7	.50	9	.41
1 2 M_1 + T	52	19	.86	5	.38	9	.31	9	.64	10	.45
T 1 2 M_1	54	14	.64	4	.31	8	.28	11	.79	17	.77
T 1 2 M_2	30	8	.36	4	.31	9	.31	3	.21	6	.27
1 2 4 M_3	28	5	.23	6	.46	4	.14	2	.14	11	.50
M_3 1 2 4	31	9	.41	4	.31	6	.21	3	.21	9	.41
M_3 1 2 4 + T	29	9	.41	2	.15	4	.14	7	.50	7	.32
T M_3 1 2 4	30	9	.41	2	.15	9	.31	2	.14	8	.36

Oral Reading Interpretation

A five-point scale for oral reading interpretation was devised by the investigator, who rated each child after listening to his oral reading both during the recording and, later, on tape. Quality was determined by fluency, phrasing, intonation, and freedom from errors. Estimate of errors was based on substitutions, repetitions, mispronunciations, insertions, refusals, and self-corrections. The coefficient of correlation between errors and the assigned over-all rating was .73. While this correlation was high, it was not so high as to indicate that the same element was being measured when rating for oral reading interpretation and when rating by number of errors. The highest rating, excellent, included 18 per cent of the sample; the next, good readers, 18 per cent; average readers, 30 per cent; fair readers, 18 per cent; and poor readers, 16 per cent. There were 12 girls and 6 boys in the highest classification in oral reading interpretation and only 3 girls as compared with 13 boys in the lowest classification in interpretation. Table 35 shows the use by these children of the selected structural patterns.

Again, differences were not outstanding. Except for the most common patterns, children in the highest group made more use of these patterns than did children in the lowest group. The children whose oral reading interpretation scores fell near the center of the scale were closer to the high group than to the low group in the distribution of their use of language patterns.

Listening Comprehension

The number of questions answered correctly following the listening to each selection constituted the child's listening score. The range of correct answers on the 16 points of the test was from 2 to 16, with a median of 10. Forty-two cases clustered around the median, with a range of 9 to 11 correct answers. At the lower extreme 3 boys had less than 4 correct answers, while at the upper extreme 6 girls had 15 or more correct answers. Scores were coded in five categories for comparison with children's use of selected language patterns. This relationship is shown in Table 36. In this comparison, the children who scored highest in listening used consistently more of the selected language patterns than did the children at the lower end of the scale. The contrast in this case is more marked than for any of the other variables.

Short Utterances

It is noteworthy that the children who scored low on the three variables of silent reading comprehension, oral reading interpretation, and listening skill used a larger proportion of short utterances in their language sample than did the children who scored high on these variables. The differences in average use ranged from .52 to 1.68 as shown in Table 37, with the highest difference being related to silent reading.

TABLE 35. TOTAL AND AVERAGE FREQUENCY OF USE OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 6 WERE CLASSIFIED ACCORDING TO ORAL READING INTERPRETATION

Structural pattern	Total frequency of use	Oral reading interpretation grade placement scores									
		Excellent (N = 18)		Good (N = 18)		Average (N = 30)		Fair (N = 18)		Poor (N = 16)	
		f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	266	42	2.33	49	2.72	72	2.40	54	3.00	49	3.06
T 1 2 4	249	46	2.56	61	3.39	65	2.17	44	2.44	33	2.06
1 2 4 + T	181	24	1.33	42	2.33	56	1.87	37	2.06	22	1.38
T 1 2 4 + T	150	36	2.00	32	1.78	36	1.20	26	1.44	20	1.25
1 2b 5	118	23	1.28	15	.83	38	1.27	26	1.44	16	1.00
T 1 2b 5	112	20	1.11	16	.89	36	1.20	21	1.17	19	1.19
T 1 2b 5 + T	55	12	.67	10	.56	13	.43	13	.72	7	.04
1 2	49	9	.50	12	.67	15	.50	9	.50	4	.25
T 1 2	50	12	.67	10	.56	12	.40	8	.44	8	.50
1 2 M_1 + T	52	13	.72	11	.61	13	.43	10	.56	5	.31
T 1 2 M_1	54	7	.39	12	.67	14	.47	11	.61	10	.63
T 1 2 M_2	30	8	.44	4	.22	9	.30	7	.39	2	.13
1 2 4 M_3	28	2	.11	2	.11	11	.37	4	.22	9	.05
M_3 1 2 4	31	5	.28	7	.39	9	.30	3	.17	7	.04
M_3 1 2 4 + T	29	6	.33	7	.39	5	.17	5	.28	6	.38
T M_3 1 2 4	30	9	.50	2	.11	9	.30	4	.22	6	.38

TABLE 36. TOTAL AND AVERAGE FREQUENCY OF USE OF SELECTED STRUCTURAL PATTERNS WHEN SUBJECTS IN GRADE 6 WERE CLASSIFIED ACCORDING TO LISTENING COMPREHENSION ABILITY

Structural pattern	Total frequency of use	Listening comprehension grade placement scores									
		Excellent (N = 10)		Good (N = 8)		Average (N = 42)		Fair (N = 12)		Poor (N = 19)	
		f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	266	40	4.00	29	3.63	116	2.76	34	2.83	47	2.47
T 1 2 4	249	53	5.30	20	2.50	99	2.36	27	2.25	50	2.63
1 2 4 + T	181	29	2.90	16	2.00	68	1.62	21	1.75	47	2.47
T 1 2 4 + T	150	26	2.60	19	2.36	57	1.36	21	1.75	27	1.42
1 2b 5	118	18	1.80	8	1.00	51	1.21	21	1.75	20	1.05
T 1 2b 5	112	22	2.20	7	.88	45	1.07	20	1.67	18	.95
T 1 2b 5 + T	55	13	1.30	5	.63	27	.64	5	.42	5	.26
1 2	49	10	1.00	3	.38	21	.50	3	.25	12	.63
T 1 2	50	12	1.20	2	.25	21	.50	8	.67	7	.37
1 2 M_1 + T	52	12	1.20	4	.50	22	.52	7	.58	7	.37
T 1 2 M_1	54	6	.60	10	1.25	16	.38	8	.67	14	.74
T 1 2 M_2	30	6	.60	4	.50	6	.14	5	.42	9	.47
1 2 4 M_3	28	6	.60	1	.13	8	.19	3	.25	10	.53
M_3 1 2 4	31	7	.70	4	.50	14	.33	2	.17	4	.21
M_3 1 2 4 + T	29	5	.50	6	.75	8	.19	1	.08	9	.49
T M_3 1 2 4	30	11	1.10	1	.13	5	.12	6	.50	7	.37

TABLE 37. TOTAL AND AVERAGE FREQUENCY OF SHORT UTTERANCES BY SIXTH GRADE PUPILS WHO RANKED IN THE HIGHEST AND LOWEST CATEGORIES ON SILENT AND ORAL READING AND LISTENING TESTS

Variable	Use of short utterances					
	High cases			Low cases		
	Number of pupils	Frequency of utterance	Average use	Number of pupils	Frequency of utterance	Average use
Silent reading comprehension	22	35	1.59	22	72	3.27
Oral reading interpretation	18	46	2.56	16	55	3.44
Listening comprehension	19	44	2.32	19	54	2.84

Sentence Length

Sentence length differed also for those children who ranked high and low on the three variables. Table 38 shows that children in the high group in silent reading, oral reading, and listening used sentences that were 1.35, 1.62, and 2.31 words longer, respectively, than those used by the low group. These are minor differences, but they are consistently in favor of the children who scored high on each of the variables. The same differences between high and low groups were found for the variables of intelligence, occupational status, and parents' education, as were shown earlier in Tables 19 to 27.

Use of Movables

The ability to expand a basic sentence by the addition of movable elements expressing place, manner, time, or cause has been assumed to be a measure of maturity in the use of language. The children in the highest group in silent reading comprehension used slightly more movables than children in the lowest group. The differences between high and low groups were a little greater when oral reading interpretation and listening comprehension were compared with the use of movables, as is shown in Table 39. Differences were significant at the one per cent level for oral reading interpretation, at the two per cent level for silent reading comprehension, and not at all for listening comprehension. Comparing these with other variables, none showed statistical significance except mental age and father's education, both of which were significant at the five per cent level. Verbal intelligence shared significance at the two per cent level with silent reading. Only mother's education was significant at the one per cent level when compared with oral reading.

TABLE 38. MEAN SENTENCE LENGTH AND DIFFERENCES IN MEAN SENTENCE LENGTH OF THE HIGHEST AND LOWEST QUARTERS OF THE SIXTH GRADE SAMPLE ARRANGED ACCORDING TO RATINGS ON SILENT AND ORAL READING AND LISTENING

Variable	Mean sentence length	Difference in mean sentence length
SILENT READING		1.35
High	14.88	
Low	13.53	
ORAL READING		1.62
High	14.70	
Low	13.08	
LISTENING		2.31
High	15.72	
Low	13.41	

TABLE 39. FREQUENCY, AVERAGE, AND SIGNIFICANCE OF USE OF MOVABLES BY SELECTED SIXTH GRADE CASES ACCORDING TO RATINGS ON SILENT AND ORAL READING AND LISTENING

Variable	Subordinate elements			
	Number of cases	Total number used	Average use	Chi square significance
SILENT READING COMPREHENSION				None
High	25	1728	69.1	
Low	25	1634	65.4	
ORAL READING INTERPRETATION				1%
High	25	1808	72.3	
Low	25	1584	63.4	
LISTENING COMPREHENSION				None
High	25	1747	69.9	
Low	25	1574	62.6	

The movables used by these Grade 6 children varied all the way from one word movables at the beginning or end of phonological units to clauses and phrases which appeared in various appropriate positions, as in the examples which follow:

I love to go $\underset{M_1}{\underline{\text{out there}}}$.

So it went $\underset{M_1}{\underline{\text{to court}}}$ and the boy lost.

$\underset{M_3}{\underline{\text{After we all got through with our plaques}}}$, we square danced.

$\underset{M_3}{\underline{\text{Then}}}$ $\underset{M_4}{\underline{\text{if you can swim five minutes}}}$ you can go in a rowboat.

$\underset{M_3}{\underline{\text{Then}}}$ he forgot, he didn't explain it all $\underset{M_5}{\underline{\text{to his son}}}$.

$\underset{M_3}{\underline{\text{Last summer}}}$ we went $\underset{M_1}{\underline{\text{to Florida}}}$ $\underset{M_4}{\underline{\text{to see my aunt}}}$.

Use of Subordinate Elements

Subordination in its various forms was studied through analysis on Level II. Table 40 shows the distribution of use of the various types of subordination by high and low categories of each of 12 variables. The variable which showed the highest degree of relationship with the use of subordinate elements was chronological age, with a five per cent level of significance. Younger children used subordinate elements an average of 63.5 times, and older children an average of 66.2 times. Verbal intelligence was significant at the two per cent level, and mother's education at the one per cent level. Oral reading interpretation proved significant at the one per cent level, though no significance was found for silent reading or listening comprehension. Average use of subordinate elements by pupils ranking high and low in silent reading comprehension was 69.1 and 65.4 respectively, a close comparison. The difference in use of subordinate elements by children ranking high and low in oral reading interpretation was wider, 72.3 for the high group and 63.4 for the low group. The difference between groups when ranked on listening comprehension was 69.9 for the high and 62.6 for the low group, a fairly narrow difference.

TABLE 40. FREQUENCY, AVERAGE, AND SIGNIFICANCE OF USE OF SUBORDINATE ELEMENTS BY SELECTED SIXTH GRADE CASES ACCORDING TO RATINGS ON SILENT AND ORAL READING AND LISTENING

Variable	Movables			
	Number of cases	Total number used	Average use	Chi square significance
SILENT READING COMPREHENSION				
High	22	730	33.2	2%
Low	22	692	31.5	
ORAL READING INTERPRETATION				
High	18	621	34.5	1%
Low	16	464	29.0	
LISTENING COMPREHENSION				
High	19	678	35.7	None
Low	19	578	30.4	

A number of types of satellites or subordinations were isolated and analyzed on Level II, as these were found in fixed slots and in movables. Satellites were used as modifiers of a noun or a verb and appeared in several grammatical shapes: a word or words, a phrase or phrases, and a clause or clauses. Usually satellites were related to the subject or to the verb; when they were related to the whole sentence they were classified as verb satellites. Only slots or movables consisting of more than one word were analyzed on Level II. For each satellite, the nucleus or head of the syntactic word group was indicated by the symbol "n." The following are examples from the recordings of the sixth grade:

The (sg) satellite. The (sg) element, a phrase related to the subject or Slot I of the sentence, was used by 98 per cent of the Grade 6 sample.

Then a whole bunch of kids came over.
(sg) n

I didn't, my little niece did.
(sg) n

My brother-in-law's father showed us how to spin rocks across
(sg) n

the lake and that was fun.

The (ss) satellite. The (ss) satellite is a subject-predicate or clause satellite related to the subject and was used by 22 per cent of the sample.

Whoever wins that they're up to bat.
n (ss)

The reason he brought him was because he wanted somebody to
n (ss)

carry on all his trade.

No, but all I can remember is that he had an ox named Babe.
n (ss)

The v(sg) satellite. The symbol v(sg) denotes the verb satellite group identified as Slot 2 in a sentence. It consisted of a main verb, a verb phrase, or a compound predicate and was used by 100 per cent of the sample.

She'd been hit by bombs and stuff like that.
v(sg) nv

Dracula just picks her up.
nv v(sg)

Then he started to turn into a bat and fly away.
v(sg) nv nv v(sg)

The sg satellite. The symbol sg, without parentheses, designated the satellite phrase group classified on Level I as 3, 4, or 5. It signified an inner complement or indirect object, an outer complement or direct object, or a predicate nominative. This was used by all the subjects in the study, with frequencies varying from 3 to 41. Examples from the recordings were:

I got one picture good.
sg

I think it's in her pipe.
sg

That made the mine that much better and everything.
sg

The ss satellite. The ss satellite is a clause which behaves as did the sg phrase. It was used by 96 per cent of the individuals in the sample, with the frequency of use in individual recordings varying from 1 to 22. Some examples of this were:

> You mean where he works?
> ss
>
> I read and I usually go to the library on Saturday and pick
>
> out a book I want to read or that I think would be good
> ss
>
> and go sit down in the reference room.

The sgv satellite. This satellite phrase group of the verb was designated on Level I as a movable and was identified by numbers 1 to 5 indicating that the phrase group was a subordinate element dealing with place, manner, time, purpose or cause, or a preposition plus Slot 3. All pupils used the sgv satellites to some extent though with varying frequencies. Examples such as the following are characteristic:

> It feels kind of funny because of the rug.
> sgv_4
>
> We usually go to Missouri about three times
> sgv_1 sgv_2
>
> to visit our grandmother and everybody.
> sgv_4
>
> Right now we're making purses for our mothers.
> sgv_3 sgv_5

The ssv satellite. The ssv symbol represented subject-predicate satellites of the verb and were numbered 1 to 5, as were movables, according to meaning: place, manner, time, purpose or cause, and a preposition plus Slot 3. The ssv forms were less used than other satellites, with ssv_5 receiving the least use. The ssv forms were omitted entirely by 17 per cent of the pupils. The examples below show the syntactic construction as it was used by the sixth grade sample and the distinction between the ssv subordinations:

> They're pretty hard to collect of on account of it's on
> ssv_4
>
> the east side and most of them isn't home when I come
> ssv_3
>
> to collect.

As far as I know, I've read a couple of books but I
ssv_2

never learn anything because I can't remember them.
ssv_4

He used to teach at the same school I went to.
ssv_1

And finally this man freed him from these people he
ssv_5

had been a slave for.

Case Studies

The intensive study of oral language at sixth grade level and its relationship to other parts of the language constellation made it very clear that each child's use of language was in some measure unique, though there were clear relationships between one aspect of his use of language and other aspects. Three case studies have been selected for reproduction as an indication of the variations noted:

Case number 5
Male
Chronological age: 11 years 10 months
Verbal intelligence quotient: 81
Non-verbal intelligence quotient: 95
Total intelligence quotient: 88
Mental age: 10 years 5 months

This boy was selected for special study because he used patterns several times that were seldom used by other pupils in the study. He had two brothers and one sister, all older than himself. His mother graduated from high school, and his father attended high school. His father's occupation was ranked as semi-skilled.

In silent reading comprehension, oral reading interpretation, and listening comprehension this boy ranked low. His silent reading comprehension was at the 3.6 grade level, and he made a great number of errors in oral reading. His oral reading interpretation corresponded to his silent reading comprehension in that he read second and third grade material meaningfully, but his reading of more difficult material was characterized by reading of words rather than meaningful phrases.

The range of sentence length was from 1 to 29 words, with a mean sentence length of 15.80 words. In all, 395 words were used, plus 36 words which were non-structural and had no communicative value. Two short utterances were among the 25 sentences selected for analysis. The complete utterances contained 40 sentence segments, 17 of which could be identified as commonly used structural patterns.

A total of 35 movables and 78 elements of subordination were used. No movable of manner appeared in Level I and no phrase or clause construction of manner appeared in Level II. Phrase satellite groups of the subject and object were frequently used, as were verb phrases. Often, when telling about a story or movie, the narrator found it necessary to use as many elements of sentence structure as he could manipulate to achieve clearness and exact meaning. The boy tried to tell his story in a clear manner; but there were times when he had difficulty, as indicated by the non-structural elements. His story resulted in several different types of subordination, especially the (ss) construction comprised of a subject-predicate satellite in the position of the subject. This satellite was seldom used by the other pupils in this study.

The following examples show how the boy handled movables and subordinate elements:

It was my brother's bird then he gave it to me.
1 2b 5 M_3 1 2 4 M_5

Saturday I went to the show and saw "Ghost of the Sea"
M_3 1 2 M_1 + 2 4

and I can't think of the other.
+ 1 2 4

There was four of 'em and these Americans were trying
v(sg) (sg) (sg) v(sg)

to get this crossroads on this hill that the Germans
ssv_1

had had.

Case number 34
Female
Chronological age: 12 years 3 months
Verbal intelligence quotient: 122
Non-verbal intelligence quotient: 118
Total intelligence quotient: 120
Mental age: 14 years 8 months

This case is described because this girl, an only child, was excellent in silent reading comprehension, oral reading interpretation, and listening comprehension.

Her mother and father attended high school but did not graduate. The paternal occupation was ranked as semi-skilled.

She used a large number of words in the selected speech sample. Counting revealed a total of 468 words, together with 41 words which possessed no communicative value. Her range of sentence length was from 1 to 51 words, with an average sentence length of 18.72 words. She used three short utterances. The high mean sentence length is probably not an indication of maturity in the use of language, since the girl used many segments which were structurally complete but were joined by "and." She showed little ability to use pitch, inflection, or juncture to indicate terminal points.

Seventeen commonly used structural patterns appeared in the 49 sentence segments of the oral language sample. She used a smaller proportion of common structural patterns than many other pupils, and many of her structural patterns were highly atypical.

She used a large number of movables and elements of subordination which could be partly the result of the long sentences occurring, because she did not understand the use of pitch, intonation, and juncture. All types of movables were used, the movables of place, time, and manner being most frequent. The subject-predicate satellite group which was classified on Level I as a movable was used six times. She used a large number of phrases in the position of the object and a large number of verb phrases.

Some of the following examples show the basic structural patterns and the movables which this girl used, and other examples illustrate the use of subordinate elements:

I have a bird, a parakeet and it's light blue and white
1 2 4 + 1 2b 5

and I have a dog it's sort of like a hound, it's
+ 1 2 4 1 2b 5 1 2b

brown, black and white.
5

We had a play the first night we went there and then we
1 2 4 M_3 + M_3 1

saw a movie on wild life by Walt Disney.
2 4 M_5

We'll be going to Dyer up on the hill if it ever gets
v(sg) sgv_1 sgv_1 ssv_4

finished.

I forget where it is now but anyway they have
ss

$\underset{ss}{\underline{\text{all you can eat}}}$ $\underset{sgv_2}{\underline{\text{for two dollars and a half}}}$ and it's

$\underset{sg}{\underline{\text{a real big fancy place}}}$ $\underset{sgv_1}{\underline{\text{out there}}}$.

Case number 39
Female
Chronological age: 11 years 10 months
Verbal intelligence quotient: 149
Non-verbal intelligence quotient: 122
Total intelligence quotient: 136
Mental age: 16 years 1 month

Case number 39 was selected because this girl ranked excellent in silent reading comprehension, oral reading interpretation, and listening comprehension and was in the highest group of the sample according to verbal and total intelligence.

Her background was favored by having a father who had 18 or more years of formal education and whose occupation placed him in the professional classification. Her mother attended graduate school. She had one older brother. Her silent reading comprehension was at the 9.5 grade level. She made very few errors in oral reading and used good phrasing. Her interpretation of meaning was excellent.

An analysis and examination of the oral language structure of this sample case showed that she had a range of sentence length from 3 to 35 words, with a mean sentence length of 12.72 words. There was a total of 318 words of communicative value, plus 27 non-structural words. Among the 27 sentence segments which she used were 12 of the 26 most common structural patterns. These 12 structural patterns represented 44 per cent of the structural patterns employed. She used five short utterances which were brief answers or comments to questions or remarks of the friend with whom she was visiting.

She used a total of 18 movables which were distributed among the various types. Sixty-five elements of subordination were identified. While the total frequencies of the movables and subordinate elements were not as great as for some children, she used fillers which showed a diversification of structural construction. She frequently used the 1 2b 5 basic structural pattern, but showed ability to use a complex type of filler within the slots. The non-structural elements were usually of one word, such as "well," "oh," "oh man," or "and" and did not show a confusion of thought or idea.

The complexity of the fillers is shown in the following sentences taken from her oral language sample:

$\underset{M_4}{\underline{\text{Because I love to read}}}$, I think books are wonderful.

This is in the time when he was fighting to become the
M_3

King of England.

My brother helps with plays at school and I don't see
(sg) sgv_2 sgv_1 v(sg)

how he takes it because I was so nervous.
ss ssv_4

Last year I read two books on the Second World War,
sgv_3 sg

which I thought were very interesting, I mean
ss

they didn't have the war scene to them.
ss

Summary

There was a relationship between silent reading comprehension and the structure of children's oral language. Pupils who ranked high in silent reading comprehension employed the most common patterns of structure more frequently than did pupils who ranked low, and they used fewer short utterances. Pupils ranking high in silent reading comprehension had a greater average use of movables and elements of subordination and a greater mean sentence length than did pupils who ranked low in this variable. According to the chi square test of significance, there was no significant difference in the use of subordinate elements and silent reading comprehension, but there was a significant difference at the two per cent level in the use of movables and silent reading comprehension.

There was a relationship between oral reading interpretation and the structure of children's oral language. The most common structural patterns appeared notably more frequently among the oral conversations of pupils who ranked excellent in oral reading interpretation than of those who ranked poor. Pupils who ranked high in oral reading interpretation used fewer short utterances than pupils who ranked low. There was a greater average use of movables and elements of subordination and a greater mean sentence length by pupils who ranked high in oral reading interpretation in comparison to those who ranked low. According to the chi square technique, a significant difference at the one per cent level was found for oral reading interpretation and the use of movables and subordinate elements.

There was a relationship between listening comprehension and the structure of children's oral language. The structure of children's oral language as measured by the frequency of use of the common structural patterns was more closely related to listening comprehension than to any other variable. Pupils who rated excellent in listening comprehension used the common structural patterns more frequently than did pupils who rated poor. Fewer short utterances were used by those who ranked high in listening comprehension. These same pupils had a greater average use of movables and subordinate elements and a longer mean sentence length than pupils in the low group. There was no significant difference, according to the chi square test of significance, in the use of movables or elements of subordination and listening comprehension.

Second Grade Study

As a portion of the study of children's language at Grade 2, an answer was sought to the following question: What relationships exist between the structure of children's oral language and their general reading ability? To obtain this answer, the Gates Primary Reading Tests, Type AWR, Form 3, Word Recognition, and Type APR, Form 3, Paragraph Reading,* were administered to children in groups of varying sizes, depending upon the number of sample cases located in a school building. The test groups were in all cases small enough to permit careful supervision to insure that all children understood directions and made the best use of the test time. Although both parts of the test were administered, only the Paragraph Meaning test was used to supply data on the reading comprehension of the 100 subjects in the sample.

Reading Age

This test provided scores which were translated in terms of reading age. The range of reading age for the 53 boys and 47 girls of the sample was from 7 years to 11 years 2 months, though the range of chronological age was narrower, only 7 years to 9 years 6 months. Typically, second grade children at the time of year the test was administered ranged from 7 years to 8 years 6 months.

In Table 41 the frequency and average use of each of the most commonly used structural patterns was tabulated for subjects in each of five categories of reading age. In order to equalize groups, four children who were amply represented by several others in their category were omitted.

The children whose reading ages fell into the lowest category made slightly more use of the basic 1 2 4 and 1 2b 5 patterns than did children in the upper category, but the higher group made appreciably more use of both patterns as structural segments within larger phonological units. The same was true of certain patterns containing movables, the children in the lower group made more use of the

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*See Appendix B.

TABLE 41. FREQUENCY AND AVERAGE USE OF STRUCTURAL PATTERNS BY SUBJECTS CLASSIFIED ACCORDING TO READING AGE

Structural pattern	Frequency of use	Reading age									
		10:10 - 10:0 (N=11)		9:9 - 9:1 (N=25)		8:9 - 8:5 (N=25)		8:4 - 8:0 (N=25)		7:10 - 7:0 (N=10)	
		f	Av	f	Av	f	Av	f	Av	f	Av
1 2 4	309	35	3.18	69	2.76	86	3.44	76	3.04	33	3.30
T 1 2 4	264	35	3.18	58	2.32	73	2.92	60	2.40	27	2.70
1 2 4 + T	189	25	2.27	48	1.92	50	2.00	40	1.60	15	1.50
1 2b 5	130	12	1.09	28	1.12	35	1.40	31	1.24	16	1.60
T 1 2b 5	107	17	1.55	26	1.04	23	.92	21	.84	7	.70
T 1 2 4 + T	74	14	1.27	12	.48	20	.80	20	.80	5	.50
M_3 1 2 4	71	7	.64	16	.64	18	.72	13	.52	8	.80
1 2b 5 + T	57	10	.91	9	.36	13	.52	12	.48	5	.50
M_3 1 2 4 + T	52	10	.91	14	.56	13	.52	13	.52	4	.40
1 2	48	3	.27	14	.56	13	.52	12	.48	7	.70
1 2 M_1 + T	43	5	.45	8	.32	10	.40	9	.36	8	.80
1 2 + T	42	5	.45	9	.36	13	.52	13	.52	6	.60
T 1 2 M_1	38	8	.73	12	.48	8	.32	8	.32	3	.30
1 2 4 T	37	5	.45	9	.36	11	.44	10	.40	3	.30
T 1 2 4 M_1	37	6	.55	7	.28	9	.36	8	.32	7	.70
T 1 2	36	5	.45	13	.52	5	.20	5	.20	2	.20
1 2 M_1	34	2	.18	11	.44	6	.24	6	.24	3	.30
1 2 M_2	32	4	.36	8	.32	5	.20	5	.20	5	.50
T 1 2 M_2	32	6	.55	3	.12	9	.36	9	.36	5	.50
1 2 4 M_1	31	3	.27	8	.32	8	.32	7	.28	2	.20
T 1 2 4 M_2	29	5	.45	3	.12	8	.32	7	.28	5	.50
M_3 1 2 M_1 + T	28	4	.36	7	.28	5	.20	4	.16	2	.20
M_3 1 2 + T	27	6	.55	2	.08	7	.28	6	.24	3	.30
T 1 2b 5 + T	25	4	.36	3	.12	5	.20	5	.20	4	.40

pattern in its simple form, while those in the higher group used it more often in conjunction with other patterns.

In order to present further evidence of the general similarities and differences in children's use of basic structural patterns, actual frequency of use of the 10 most common patterns is shown in Table 42 for the 11 children who ranked highest and the 10 who ranked lowest in reading age. The total frequency of use of these patterns by children with high reading age ranged from 9 to 21, and the frequency for those with low reading age ranged from 6 to 17. Since the 25 phonological units analyzed for each child contained, of necessity, a larger number of structural units than is represented in this group of commonly used units, each child employed a variety of structural patterns and was not limited to these common ones even though he could use them. Children who ranked well above grade expectation in general reading ability and those who were within the range of expectation or slightly below showed ability not only to use common patterns but also to go beyond these patterns to further modifications of them and to other, less common patterns.

Sentence Length

The length of the sentences or phonological units used by the children varied considerably, with girls using slightly longer units than boys. Table 43 shows the mean length of phonological units for each of the 100 children in the sample, arranged according to reading age. The one child whose reading age was between 10 years 11 months and 11 years 6 months achieved a mean sentence length of 15 to 17 words, while two children with reading ages between 8 years 5 months and 8 years 9 months had a mean sentence length of 18 to 20 words.

Of the 22 children whose phonological units averaged not more than 11 words, 19 had reading ages between 8 years and 9 years 9 months. The largest group of children, 41, used phonological units which averaged 12 to 14 words in length. Most of these children were in the reading age range of 7 years to 9 years 9 months. The children who used 15 to 17 words were grouped within the range from 8 years to 10 years 10 months except for the one child who ranked higher. The trend was for children whose reading age was above the grade norm to use longer phonological units.

Use of Movables

Since it was originally postulated that increase in the use of movables is evidence of more mature use of language, chi square technique was applied to frequencies in the use of the five movables in relation to 10 variables. Results of the chi square test of significance revealed no statistically significant differences. Some other method of handling the data might yield statistical evidence of significant differences, though it is realized that differences may exist in spite of failure of the chi square technique to reveal them.

TABLE 42. USE OF 10 MOST FREQUENT STRUCTURAL PATTERNS BY 11 CASES WITH HIGH READING AGE AND 10 CASES WITH LOW READING AGE AND VARYING INTELLIGENCE RATINGS

Identification number	Reading age	Mental age	Intelligence quotient	Structural pattern										Total
				1 2 4	T 1 2 4	1 2 4 + T	1 2b 5	T 1 2b 5	T 1 2 4 + T	T_M 1 2 4	1 2b 5 + T	T_M 1 2 4 + T	1 2	
HIGH														
210	11-2	9-5	133	4	4	3	0	2	2	2	0	1	0	18
271	10-7	10-6	139	0	1	6	4	0	0	0	0	1	1	13
279	10-7	9-4	126	4	2	1	2	0	0	1	0	2	0	12
214	10-4	10-5	143	1	7	3	1	2	0	1	1	1	0	17
287	10-4	9-2	124	3	0	1	1	1	1	0	2	0	0	9
211	10-1	10-3	127	2	5	3	1	1	1	1	0	2	0	16
297	10-1	9-2	113	4	2	3	1	4	2	1	2	0	0	19
233	10-1	8-5	110	7	2	1	0	1	0	1	2	0	0	14
200	10-1	9-6	125	3	4	2	1	0	2	0	0	1	0	13
274	10-0	10-6	125	2	1	3	3	1	0	0	0	1	1	12
235	10-0	10-5	128	2	4	3	0	2	3	3	3	0	1	21
LOW														
232	7-11	7-6	103	6	2	1	3	0	0	0	0	1	0	13
234	7-10	7-11	100	4	0	1	0	1	0	2	1	0	1	10
213	7-8	7-8	98	2	1	2	1	3	0	2	0	1	2	14
217	7-7	7-10	103	0	1	0	2	0	0	2	1	0	0	6
245	7-6	9-10	78	4	3	1	1	0	1	0	0	1	0	11
251	7-6	7-8	108	3	5	4	1	0	0	2	0	1	0	16
205	7-6	7-6	87	3	3	4	2	2	1	1	1	0	0	17
238	7-2	8-0	95	4	2	2	3	0	0	0	0	0	0	11
244	7-2	8-10	87	3	0	0	1	1	1	0	0	0	1	7
252	7-0	5-5	84	4	2	0	2	0	1	0	1	1	3	14

TABLE 43. MEAN LENGTH OF PHONOLOGICAL UNITS FOR SUBJECTS CLASSIFIED ACCORDING TO READING AGE

Mean length in words	Reading age											
	11:6 - 10:11		10:10 - 10:0		9:9 - 9:1		9:0 - 8:5		8:4 - 8:0		7:10 - 7:0	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
9 - 11	0	0	2	17	7	28	6	24	6	22	1	10
12 - 14	0	0	3	25	8	32	10	40	11	41	9	90
15 - 17	1	100	7	58	10	40	7	28	10	37	0	0
18 - 20	0	0	0	0	0	0	2	8	0	0	0	0
Total	1		12		25		25		27		10	

Use of Subordination

The total number of subordination elements used by the 100 children of the Grade 2 sample was 5,397. The sg, or satellite group (phrase) related to the subject, appeared most frequently--1,420 times in all. This was followed in frequency by the verb satellite group, v(sg), which was a verb, verb phrase, or compound predicate. It appeared 1,041 times in the total speech sample. The remaining 13 subordinate elements appeared with descending frequencies, with some of the subject-predicate satellites of the verb, ssv, appearing least frequently.

When the chi square technique was applied to determine the relationship of these frequencies to the 10 variables, none proved statistically significant. As in the case of the movables, it appears possible that some modification of this technique or some other method of handling the data might have provided a truer picture of relationships.

In spite of the fact that differences were not statistically significant, there were differences. The chi square value obtained for mother's education and the 15 subordination types was closest to statistical significance, with father's education, socio-economic status, chronological age, and reading age following in order. The children in the high quartile of reading age used some of the types of subordination as many as 42 times more than did the children in the low group. Conversely, a few of the types of subordination were used slightly more frequently by children in the low group. Larger samples of speech might bring to light further differences.

Case Studies

As was true with children at the sixth grade level, the second grade children presented distinct individual differences, though there was clear relationship between the various aspects of each child's use of language. The five case studies which follow present a range of general characteristics and of language skill:

Case number 2
Female
Chronological age: 7 years 10 months
Verbal intelligence quotient: 155
Total intelligence quotient: 139
Reading age: 10 years 7 months

The subject of this case study, a girl, did not at first appear impressively fluent in language, nor did she seem to have the breadth and depth of interests that some of the other children in the sample had manifested. Her acquaintance with stories appeared to have developed via the medium of television. Her knowledge of the story of Tom Sawyer, unlike that of some of the other children, had been acquired piece-meal through acquaintance with another child who had puppets representing the story characters. Later in the recording session, this girl launched into an account of one of the Bobbsey Twins books and recorded a good quantity of language.

The quality of the language, however, was good. The sample of language yielded only 23 phonological units, since it was necessary to classify two units as utterances. In these 23 units, it was possible to count 42 separate structural segments; thus it may be noted that the amount of complication by addition of units was considerable. The tendency to add on units may provide an excellent basis for well-structured, orderly complication of expression when maturity in language is reached. Of the 42 structural segments identified, 21 were based upon the 1 2 4 structure, six contained the 1 2b 5 pattern, three contained the 1 2 3 4 pattern, and 10 units contained a 1 2 or 1 2b structural base. The two structures which did not follow these patterns are given here.

. . . $\underset{T}{\text{and}}$ $\underset{2b}{\underline{\text{there's}}}$ $\underset{1}{\underline{\text{skirts and dresses}}}$ . . . and everything

like that.

Sometimes I go upstairs $\underset{T}{\text{and}}$ $\underset{2}{\underline{\text{play}}}$ $\underset{M_2}{\underline{\text{with my friend}}}$.

The child used seven M_1 movables, eight M_2 movables, 11 M_3 movables, three M_4 movables, and two M_5 movables. At no time was a movable placed in such a way as to interrupt the order of the 1 2 4, 1 2b 5, or 1 2 sequence. The use of subject-predicate movables was extensive and competent. The M_3 movables included one-word and two-word forms, prepositional phrases, and several time clauses introduced by "when." The M_4 movables were subject-predicate satellites which are clauses of reason introduced by "because."

This was another able child with high intelligence test scores, an advanced mental age of 10 years 6 months, and a reading age of 10 years 7 months. She shared second place in the reading comprehension distribution with a boy who is the subject of Case number 3. The father's occupation was classified as professional (Class I), father's education was listed as 18 years, and mother's education as 15 years.

If intelligence quotient and mental age designation can be used to make absolute predictions, one might expect this girl to be at the top of the reading achievement order. It is interesting to note, however, that she had been surpassed to some degree by a subject not quite her equal in intelligence quotient scores and mental age designation. This has no great significance since another reading test might reverse the positions of these two subjects, and both were reading well above their grade placement. On the other hand, some attention should probably be given to the fact that the more able subject, according to intelligence quotient, had a little less stability in language patterns and rates in reading than the other child with the more regular language structure.

The girl described in this case study ranked first in verbal intelligence, third from the top of the distribution in mental age, fourth from the top in total intelligence distribution, and twenty-sixth in non-verbal intelligence.

The Level II analysis for this child revealed several subject-predicate satellites and a sizable number of word-group satellites used as M_2 expressions of manner. The ratio of subject-predicate satellites to word-group satellites in Slot 4 was relatively high. The mean length of structural unit for this girl was 14 words. This was the most common mean length of structural unit for the sample of 100 subjects, but 43 per cent of the girls in the sample had a greater mean length of structural unit. The mean length of structural unit for this child might be explained by the lack of subject-predicate satellites in M_1 expressions of place, a limited use of word-group satellites in Slot 1 (subject), and a rather reduced number of word-group satellites in Slot 2.

Case number 3
Male
Chronological age: 7 years 7 months
Verbal intelligence quotient: 142
Total intelligence quotient: 126
Reading age: 10 years 7 months

The subject of this case study, a boy, proved to be good at retelling stories and at explaining how to do specific things, such as playing marbles. In the process of telling stories, he made good use of direct discourse. Several M_3 movables used were adverbial clauses of time; the M_4 movable was a conditional clause introduced by "if." The central structures used in the segments and units were 1 2 4, 1 2, and 1 2b patterns, uninterrupted by movables. The placement of movables was *before and* after the central 1 2 4, 1 2, and 1 2b 5 structures. There were seven M_1 movables, five M_2 movables, six M_3 movables, one M_4 movable, and one M_5 movable. The language sample was clear and simple, with none of the proliferation of segment upon segment noted in the language sample of Case number 2.

There was a tendency to use the compound predicate structure as exemplified in the following:

$$\underset{2b}{\underline{\text{There was}}}\ \underset{1}{\underline{\text{this caterpiller}}}\ \underset{M_1}{\underline{\text{there}}}\ \underset{+}{\text{and}}\ \underset{2}{\underline{\text{said}}}\text{, "}\underset{4}{\underline{\text{See the}}}$$

$$\underset{(4)}{\underline{\text{cookie that says 'eat me' and the bottle that says}}}$$

$\underset{(4)}{\underline{\text{'drink me'}}}$."

It is interesting to note the use of "and said" which would ordinarily be a relative clause. It may be that this was an undetected error upon the part of the boy and that he meant to say, and would usually have said, "that said." There are numerous uses of a compound-predicate in Slot 2 however. It may be that some children use a compound predicate in Slot 2 as an intermediate step in a progression toward the use of relative or adjectival clauses. The following is of some interest in this connection:

$\underset{M_3}{\underline{\text{When Little Red Riding Hood got there}}}$ $\underset{1}{\underline{\text{the wolf}}}$ $\underset{2b}{\underline{\text{was}}}$

$\underset{5}{\underline{\text{in grandmother's clothes with glasses on}}}$ $\underset{+}{\text{and}}$

$\underset{2}{\underline{\text{scared}}}$ $\underset{4}{\underline{\text{Little Red Riding Hood}}}$.

This appears to be a series of structural elements which might well have been expressed with a clause of time, an adjectival clause, and a main clause. In any case, this boy demonstrated both developing maturity of expression and a good proportion of stable, well-ordered expression.

The boy was third from the top of the reading age distribution and sixth from the top in verbal intelligence, but he was much lower and past the mid-point of the distribution for nonverbal intelligence. He was in approximately the fourth quartile of the distributions for total intelligence quotient and for mental age. The occupation of the father was listed as professional (Class I), the father's education was 18 years, and the mother's education as 17 years.

This child had a low ratio of subject-predicate satellites to word-group satellites in Slot 4, a markedly limited use of M_2 expressions of manner, and a limited use of word groups in Slot 2. The mean length of structural unit for this subject was 11 words. Since the boy was an excellent reader, a question may be raised concerning the relationship of mean length of structural unit to reading achievement.

Case number 4
Male
Chronological age: 7 years 4 months
Verbal intelligence quotient: 136
Total intelligence quotient: 144
Reading age: 8 years

Case number 4, a boy, talked largely in terms of family happenings, fishing trips and their incidents, and arguments and quarrels waged with his brother. The language sample was characterized by 1 2 4, 1 2b 5, and 1 2 structures as central elements in the structural units and segments. The language differed from that of the previous case in that the order of the 1 2 4, 1 2b 5, and 1 2 structures (subject-verb-complement slots) was frequently interrupted, and there was much piling of one segment upon another, sometimes as many as five segments being grouped as one structural unit.

The movables were placed in a manner similar to that employed by other children except that some movables interspersed Slots 1, 2, and 4, and some were used in strings or close sequences. The following are examples of unique movable placement:

$$. \ . \ . \ \underset{T}{\text{and}}\ \underset{1}{\underline{\text{me and him}}}\ \underset{2}{\underline{\text{ride}}}\ \underset{M_1}{\underline{\text{in the pasture}}},\ \underset{M_3}{\underline{\text{'bout ever'}}}$$

$$\underset{(M_3)}{\underline{\text{Sunday an' Saturday}}},\ \underset{M_4}{\underline{\text{if we can}}}.$$

$$\underset{1}{\underline{\text{I}}}\ \underset{(2)}{\underline{\text{don't}}}\ \underset{M_2}{\underline{\text{hardly}}}\ \underset{2}{\underline{\text{know}}}\ \underset{4}{\underline{\text{what I'd do}}}.$$

Totals in use of movables were nine M_1 movables, four M_2 movables, five M_3 movables, three M_4 movables, and one M_5 movable. One M_3 and three M_4 movables were subject-predicate groups or clauses.

There seemed to be a tendency to use unique structural patterns, either a pattern not duplicated at any time within the total language sample, or one with a frequency of only 2, 3, or 4 throughout the total language sample. Three structural patterns employed by this boy were completely atypic as far as this study is concerned.

The intelligence test scores seemed to set the stage for high achievement, but the boy's reading performance was barely at grade-level and was certainly much below his apparent ability. Selection for a case study description was made for this reason. This boy was fourth from the top in the verbal intelligence distribution, fourth in non-verbal intelligence, second in the total intelligence list, and twelfth from the top in the mental age distribution. Of the 100 children used in the study, 75 per cent made higher scores on the reading test than the subject of this case study.

The occupation of his father was listed as "skilled worker" (Class III). The father's education was given as 10 years; the mother's education as 12 years with some additional post high school education.

The boy expanded the fixed slots and movables in a relatively capable manner and showed a high ratio of subject-predicate satellites to word-group satellites in Slot 4. Such expansions resulted in a mean length of structural unit amounting to 17 words. However, he made more extensive use of M_1 expressions (place) than of any other type of movable. Conversely, he made a limited use of word-group satellites in Slot 1. Both of these expansions were highly frequent in the total language sample but were not typical of this language sample.

Case number 9
Male
Chronological age: 8 years 6 months
Verbal intelligence quotient: 107
Total intelligence quotient: 95
Reading age: 7 years 2 months

This child, a boy, had a mental age six months below his chronological age, a verbal intelligence quotient of 107, and a total intelligence quotient of 95. The total intelligence quotient was substantially reduced by the non-verbal intelligence quotient, which was only 82--25 points below the verbal intelligence quotient. The occupation of the father was classified as Class V for partially skilled workers. Both father and mother had nine years of education.

There were not many factors operating in behalf of the boy with relation to academic success; however, this boy was not the slowest child in the sample of 100 subjects. Seven cases had a lower total intelligence quotient and 48 cases had a lower verbal intelligence quotient. In non-verbal intelligence quotient, the subject was surpassed by 96 per cent of the subjects, and 68 per cent of the subjects had higher mental ages. A case study was made of this subject because he made the third lowest score in reading. His reading age was 7 years 2 months, about 10 months below his mental age and much lower than the verbal intelligence quotient and total intelligence quotient would indicate.

An analysis of the language sample revealed good use of basic structural patterns. The 1 2 4 structure was used as a central core 14 times, the 1 2b 5 structure, three times, and the 1 2 structure, five times. The boy also made use of the 1 2b element as a central unit in a structural pattern in two instances; this seemed to be a unique characteristic of this particular child. The use of movables was somewhat limited as compared to other cases, the frequencies being 4, 3, 6, and 4 for the M_1 movable of place, the M_2 movable of manner, the M_3 movable of time, and the M_4 movable expressing cause or condition, respectively. The use of movables included words, word groups, and subject-predicate satellites.

The unusual patterns used are given below:

And the batter swings at it and $\underset{M_4}{\underline{\text{if he hits it}}}$ $\underset{1}{\underline{\text{he}}}$ $\underset{2}{\underline{\text{runs}}}$

$\underset{M_1}{\underline{\text{all the way around the bases}}}$.

Well $\underset{1}{\underline{\text{I}}}$ $\underset{(2)}{\underline{\text{don't}}}$ $\underset{M_2}{\underline{\text{even hardly}}}$ $\underset{2}{\underline{\text{know}}}$ $\underset{4}{\underline{\text{it}}}$, T

T $\underset{1}{\underline{\text{I}}}$ $\underset{(2)}{\underline{\text{don't}}}$ $\underset{M_2}{\underline{\text{even}}}$ $\underset{2}{\underline{\text{know}}}$ $\underset{4}{\underline{\text{it}}}$.

And $\underset{M_3}{\underline{\text{then}}}$ $\underset{M_4}{\underline{\text{if the boy shoots and he misses and the}}}$

$\underset{(M_4)}{\underline{\text{other one shoots and he misses and the other boy}}}$

$\underset{(M_4)}{\underline{\text{shoots 'cause the other boys are up close}}}$, well

$\underset{1}{\underline{\text{he}}}$ $\underset{2}{\underline{\text{can hit}}}$ $\underset{4}{\underline{\text{him}}}$.

This boy became involved in many subject-predicate satellites as he tried to explain rules and procedures of games. The use was well handled in some instances but not in others.

He made limited use of M_2 expressions of manner and limited expansions of these movables as well. The use of M_3 movables was markedly small, but there was a relatively high ratio of expansion. All of the children made moderate use of subject-predicate satellites in M_4 expressions of cause or condition, but this child used an unusually high number of subject-predicate satellites in M_4 expressions. Four of these ssv_4 elements may be found within the M_4 movables reproduced in the case study. The limited and extensive expansions of slots and movables cancelled out their effects to a certain extent, so that the mean length of structural unit was 13 words for this child.

Case number 10
Male
Chronological age: 9 years 1 month
Verbal intelligence quotient: 98
Total intelligence quotient: 97
Reading age: 7 years 2 months

This boy made the second lowest reading score of all the subjects in the study. His mental age was not much below his chronological age, but his reading age fell to 7 years 2 months. Therefore, he did not do as well in reading as one might expect him to do. He ranked rather high on the mental age distribution because his mental age was nearly equal to his chronological age, and he was an over-age child for his grade. The total intelligence quotient of this subject placed him at the seventeenth percentile in the total distribution in intelligence for the 100 cases.

This child, in common with only a small number of cases in the sample for this study, seemed to have a life setting which was not likely to be conducive to school success. He was the youngest of four children, two of whom were already grown. The occupation of the stepfather was classified in Class V for partially skilled workers. The stepfather's education was listed as eight years of public school education with some additional vocational training. The mother had 11 years of education. The boy's father was still living, and his occupation was also listed in Class V.

The child made numerous fond and respectful references to elderly people in the family. He was not very childlike in manner, being deliberate and rather dour with occasional silliness stimulated by unlikely remarks and events. The whole constellation of manner, personality, and language seemed to type the subject as a member of one of the very old Anglo-Saxon hill-country families. The boy was mildly cooperative and diffident with regard to all school-connected affairs.

Fewer uses of the 1 2 4 sequence as central elements in structural segments were noted in this boy's language sample than are usually found. The 1 2 pattern tended to be used more often as a core unit, and there was a particular addiction to 2b 1 and 2b 1 T patterns. Seven of the first and three of the second were used in this small sample of 17 structural units. There were six atypic patterns used, two of which were in an exceptionally long structural unit consisting of five smaller structural segments strung together in an unwieldy fashion. The M_1 movables of place were used seven times, M_2 movables (manner) were used four times, and M_3 movables of time were used twice. The small number of M_3 movables was unusual; most children, both able and less able, used more M_3 movables than any one of the other types of movables. None of the movables used took the form of a subject-predicate satellite.

The ratio of expansions of movables to the number of movables used was not very indicative in this case because the subject made a very limited use of all types of movables except the M_1 movable. The number of word-group satellites in Slot 4 was extremely low; however, the number of subject-predicate satellites in Slot 4 was also very low. The mean length of structural unit was 12 words, the number of words apparently being supplied by expansions of M_1 movables of place and numerous expansions of Slot 2.

Summary

The reading scores for the children of the Grade 2 sample covered a range of more than four years, running from a low of seven years years to a high of 11 years 2 months. Children in the lowest category of reading age made slightly more use of the basic patterns which consist only of fixed slots, while those in the highest category of reading age used more of these patterns as structural segments within larger phonological units.

The mean length of the phonological units used by the 100 children in the sample ranged from 9 words to 20 words. Children whose reading age was above the grade norm tended to use longer phonological units.

There was no significant differences between the use of movables by children of the highest and lowest segments of the population sample based on reading age.

While there were differences between the uses of types of subordination according to the 15 variables studied, none of the differences was statistically significant when measured by the chi square technique. This was true when high and low groups according to reading age were compared, though actual differences appeared in the use of a number of types of subordination.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This study recorded and analyzed for syntactic structure samples of the oral language of 575 elementary school children of Grades 1 through 6. While the study was concerned mainly with the analysis of children's language, attention also was given to the relationship of that language to the language of certain sets of reading textbooks and to the quality of reading of the 100 sixth grade children in the population sample.

The study was designed to discover answers to five major questions. The findings related to each question are summarized in detail at the end of the chapter dealing with that question. Some of the more important findings are reviewed below and attention is called to conclusions and implications, together with some suggestions which may be inherent in them.

The Analysis of Children's Language

The research was designed to answer the following five major questions:

1. What patterns of structure appear in the oral language used by children in the six grades of the elementary school?
2. What patterns of subordination and elaboration can be isolated and described through linguistic analysis?
3. To what extent are these patterns of structure found in the language of children at each of the six grade levels related to the variables of age, sex, and intelligence of the children and the socio-economic background and education of the parents?
4. Are the language patterns which children use at these grade levels (Grades 1 through 6) found in the reading textbooks designed for these grades?
5. What relationships appear at sixth grade level between the structure of children's oral language and their silent reading comprehension, oral reading interpretation, and listening comprehension?

The first three of these questions dealt with the structure of children's language. The findings which serve as answers to these questions are summarized on pages 60 and 61.

The traditional grammatical concept of sentence was discarded, and a system of segmentation of recordings was employed which divided the recorded speech into phonological units. This was believed to be the best method of preserving for analysis actual speech patterns as they were produced by the children.

A major contribution of the study is the method of analysis which utilizes a linguistic scheme devised for this study by Bahtiar and which has been refined and validated for use in this study and that of Loban by a jury of scholars in structural linguistics. The scheme made it possible to divide the 25 selected phonological units from each child's recording into patterns of fixed slots and movables and to further analyze some of the slots and movables for their constituent content and pattern. The method of analysis was used in this limited manner to isolate and quantify the language patterns used by the children in the population sample. The possibilities of the scheme far exceed the use made of it in this study. It could be used to study in greater detail the elements children use in their sentence patterns and the way they use them. It could form the basis for a study of the organization within sentences, the ways in which parts are knit together, the degree of coherence through subordination, and the extent of rambling. The relation of the range of vocabulary to verbosity could be studied with this scheme as a basis. A study could be made of deviations from conventional usage and syntax. Semantic studies and studies of elements of style might grow out of use of this scheme of analysis.

The data obtained from the analysis of children's language appear to warrant the following generalizations:

1. Children at all grade levels used a wide range of language patterns.

2. Certain patterns which children used with great frequency appear to be basic building blocks of their language.

3. These basic patterns were combined in phonological units with other patterns in a wide variety of ways.

4. Children at all grade levels could expand and elaborate their sentences through the use of movables and elements of subordination.

5. The fillers employed by children in filling the various slots and movables varied considerably in shape, though there were few outstanding differences in the fillers used by children of different ages.

6. The use of the chi square technique revealed significant differences between the use of movables and patterns of

subordination and certain variables of intelligence, mental age, occupational status, and parental education.

Further research is needed at a number of points. Except in case studies of selected individuals, little study was made of the many patterns that were used infrequently to learn to what extent they represented unique and creative ways of using language which were at the same time clear, meaningful, and within the category of standard usage. It is quite possible that study of these patterns would reveal points at which children need help with usage and with understanding of sentence structure. Certainly the number of long, run-on sentences used by many children was evidence of need for help both with cutting long units into shorter units on the basis of meaning and with transmuting some coordinately arranged units into subordinate ones to clarify meaning and perspective.

This study utilized a midwestern population with a narrow range of ethnic background. Also, because the community includes a large university, the sample for some grades was skewed somewhat toward the upper level in intelligence, occupational status, and parental education. Similar studies should be carried on in communities in other geographic areas and with a wider range of ethnic, cultural, and economic differences.

Comparison of the Language Used by Children with the Language of Reading Textbooks

Reading matter is composed of words arranged in patterns of syntax. The arrangement is fully as much a carrier of meaning as are the words. It is customary to control very systematically the introduction of vocabulary into children's readers and to provide repetition to insure mastery of each new word, derivative, or phonic element added.

In seeking an answer to the fourth question in this study, concerning whether the language patterns which children use at these grade levels are found in the reading textbooks designed for these grades, four widely used reader series were used. These books were searched to discover which of the language patterns used most frequently by children appeared in a selected sample of reader pages. The sample of each reader series included the whole of all preprimers and eight pages selected from the beginning, middle, and end of each other basic reader in the series from primers through sixth grade readers. While this study did not produce conclusive evidence of the presence or lack of certain patterns in any given book beyond the preprimer level, the total sample was large enough to justify the following generalizations:

1. The basic subject, verb, object pattern was the only pattern to appear in the samples of practically all of the books.

2. The patterns which appeared in the sample differed from book to book within a series as well as from series to series.

3. Patterns of sentence structure appeared to be introduced at random in a rather haphazard manner.

4. A pattern of structure, once introduced, seemed not to be followed by any sort of repetition or effort at mastery.

5. There appeared to be no scheme for the development of control over sentence structure which paralleled the generally accepted scheme for the development of control over vocabulary.

These findings lead to other questions which badly need to be answered. Does the sentence structure in children's books influence the ease or difficulty of learning to read? To what extent? Can a scheme of order of difficulty of language patterns be devised which can be utilized in textbook writing? Can patterns of structure be introduced systematically and repeated until children read them with ease? Should tests of difficulty of patterns of syntax be included in formulas for measuring readability? Does the scheme of linguistic analysis employed in this study suggest means of devising such a test?

This part of the present study raises more questions than it answers. Further research is needed along a number of lines before even the basic question of this study can be answered conclusively.

Relationship of Language to Reading and Listening at Sixth Grade

It is a truism that learning proceeds from the known to the unknown, from what is learned to what is to be learned. Most elementary school children use oral language with some degree of freedom and ease, but not all of them learn to read with equal ease. The question of relationships between children's use of oral language and the skill they develop in oral and silent reading is one which seems to need study. Time and circumstances permitted relatively thorough study of the matter only at sixth grade level (though a little work was done at second grade level). Consequently, the fifth major question concerned the relationships that appear at sixth grade level between the structure of children's oral language and their silent reading comprehension, oral reading interpretation, and listening comprehension.

Standardized tests of silent reading comprehension, recordings of oral reading interpretation, and pencil and paper tests of listening comprehension indicated that relationship did exist at the sixth grade level between children's use of oral language and the variables studied. Certain points appeared noteworthy:

1. Children who ranked high in silent reading comprehension, oral reading interpretation, and listening comprehension made more use of the common structural patterns than did children who ranked low on these variables. The use of these patterns was more closely related to listening comprehension than to any other variable.

2. These high-ranking pupils used fewer short utterances and had a higher mean sentence length than did pupils in the low-ranking group.

3. The children who ranked high on these variables made greater use of movables and elements of subordination and elaboration than did children who ranked low on these variables.

4. Utilization of the chi square test of significance showed significance at the one per cent level between use of movables and oral reading interpretation, significance at the two per cent level between use of movables and silent reading comprehension, and no significance between use of movables and listening comprehension.

5. The chi square test indicated no significance between use of elements of subordination and silent reading comprehension or listening comprehension, though there was significance at the one per cent level between the use of elements of subordination and oral reading interpretation.

Obviously, much more study is needed of relationships between children's use of language and these variables.

Study of Reading at the Second Grade Level

A standardized test of silent reading was administered to children in the second grade sample, and the reading age scores obtained were compared with children's use of language. The few conclusions which could be drawn from this comparison differed at several points from those of the more intensive sixth grade study.

1. Children in the lowest category of reading age made more use of simple patterns of fixed slots, while children in the highest category tended to use the patterns in extended and elaborated form and therefore in longer phonological units.

2. Use of the chi square technique showed no differences between variables that were high enough to be statistically significant.

No conclusions can be drawn from this study. More intensive research is needed at primary grade levels to ascertain whether there is any true relationship between use of language and the development of skill in silent and oral reading.

A Concluding Statement

The value of this research resides mainly in the evidence it has produced regarding the patterns of linguistic structure commonly used by children and the tremendous flexibility with which children use these patterns in their oral language. It seems safe to say that children learn fairly thoroughly at an early age the basic structures of their language.

The oral language children use is far more advanced than the language of the books in which they are taught to read. Perhaps this is as it should be, but evidence is needed as to whether children would be aided or hindered by the use of sentences in their books more like the sentences they use in their speech.

It is possible that children need help to recognize and understand the entire phonemic scheme of English, not only the basic phonemes that are built into morphemes but also the suprasegmental phonemes of pitch, stress, and juncture as they use them in oral speech. Such knowledge might help children better to turn the stimulus of printed symbols into oral language patterns for both comprehension and interpretation.

No evidence is available regarding the relationship which may exist between children's use of basic structural patterns and the degree of grammaticalness of their speech. It may be that help with recognizing by ear, tongue, and mind the basic structural patterns of English and their interrelationship will help with the teaching of grammar and usage.

BIBLIOGRAPHY

Bloomfield, Leonard, *Language*, Henry Holt and Company, New York, 1951.

Bossard, James H. S., "Family Modes of Expression," *The Sociology of Child Development*, Harper and Brothers, New York, 1948.

Brown, Roger, *Words and Things*, The Free Press, Glencoe, Illinois, 1958.

Carroll, John B., "Language Development," in *Encyclopedia of Educational Research*, pp. 744-752, edited by Chester W. Harris, The Macmillan Company, New York, 1960.

Chall, Jeanne S., *Readability: An Appraisal of Research and Application*, Bureau of Educational Research Monographs, no. 34, The Ohio State University, Columbus, 1958.

Davis, Edith Atwood, "The Location of the Subordinate Clause in Oral and Written Language," *Child Development* 12:333-338, December, 1941.

"Mean Sentence Length Compared with Long and Short Sentences as a Reliable Measure of Language Development," *Child Development* 8:69-79, March, 1937.

Duker, Sam, "A Selected Bibliography on the Teaching of Listening at the Elementary Level," *Journal of Communication* 6:63-68, Summer, 1956.

Fea, Henry R., "Interrelationships Among Materials Read, Written, and Spoken by Pupils of the Fifth and Sixth Grades," *Journal of Educational Psychology* 44:159-175, March, 1953.

Fisher, Mary Shattuck, *Language Patterns of Pre-school Children*, Child Development Monographs, no. 15, Bureau of Publications, Teachers College, Columbia University, New York, 1934.

Flesch, Rudolph, "A Readability Formula in Practice," *Elementary English* 25:344-351, October, 1948.

Francis, W. Nelson, *The Structure of American English*, The Ronald Press Company, New York, 1958.

Fries, Charles C., *The Structure of English: An Introduction to the Construction of English Sentences*, Harcourt, Brace and Company, New York, 1952.

Gilmore, John Vaughn, *The Relationship Between Certain Oral Reading Habits and Oral and Silent Reading Comprehension*, Doctor's thesis, Graduate School of Education, Harvard University, Cambridge, 1947.

Gleason, Henry Allan, Jr., *An Introduction to Descriptive Linguistics*, Henry Holt and Company, New York, 1955.

Hahn, Elise, "An Analysis of the Content and Form of the Speech of First Grade Children," *The Quarterly Journal of Speech* 34:361-366, October, 1948.

Heider, Fritz K., and Heider, Grace M., "A Comparison of Sentence Structure of Deaf and Hearing Children," in *Psychological Monograph* 52:42-103, June, 1940.

Hill, Archibald A., *An Introduction to Linguistic Structures*, Harcourt, Brace and Company, New York, 1958.

LaBrant, Lou, "A Study of Certain Language Developments of Children in Grade 4-12," *Genetic Psychology Monographs* 14:387-394, November, 1933.

Leopold, Werner F., *Bibliography of Child Language*, Northwestern University Press, Evanston, Illinois, 1952.

Lloyd, Donald J., and Warfel, Harry R., *American English in Its Cultural Setting*, Alfred A. Knopf, New York, 1956.

Marten, Milton E., *The Relationship Between Expressed Interests and Listening Skills of Children in the Sixth Grade*, Doctor's thesis, School of Education, Indiana University, Bloomington, 1958.

McCarthy, Dorothea A., "Child Development: Language," in *Encyclopedia of Educational Research*, pp. 165-172, edited by Walter Scott Monroe, The Macmillan Company, New York, 1950.

"Language Development in Children," in *A Manual of Child Psychology*, pp. 492-630, edited by Leonard Carmichael, John Wiley and Sons, Inc., New York, 1954.

Language Development of the Preschool Child, Institute of Child Welfare Monograph Series, no. 4, University of Minnesota Press, Minneapolis, 1930.

Nice, M. M., "An Analysis of the Conversation of Children and Adults," *Child Development* 3:240-246, September, 1932.

Noel, Doris L., "A Comparative Study of the Relationship Between the Quality of the Child's Language Usage and the Quality and Types of Language Used in the Home," *Journal of Educational Research* 47:161-167, November, 1953.

Pike, Kenneth L., *The Intonation of American English*, University of Michigan Press, Ann Arbor, 1946.

Roberts, Paul, *Patterns of English*, Harcourt, Brace and Company, New York, 1956.

Understanding English, Harper and Brothers, New York, 1958.

Robinson, Helen M., "Factors Which Affect Success in Reading," *Elementary School Journal* 55:263-269, January, 1955.

Sapir, Edward, *Language*, Harcourt, Brace, and Company, New York, 1921.

Shire, Sister Mary Louise, *The Relation of Certain Linguistic Factors to Reading Achievement of First Grade Children*, Doctor's thesis, Graduate School, Fordham University, New York, 1945.

Shirley, Mary M., "Common Content in the Speech of Pre-school Children," *Child Development* 9:333-346, September, 1938.

Sledd, James A., *A Short Introduction to English Grammar*, Scott, Foresman and Company, Chicago, 1959.

Smith, Dora V., "Growth in Language Power as Related to Child Development," in *Teaching Language in the Elementary Schools*, pp. 52-64, Forty-third Yearbook of the National Society for the Study of Education, pt. 2, University of Chicago Press, Chicago, 1944.

Smith, Madorah E., *An Investigation of the Development of the Sentence and the Extent of Vocabulary in Young Children*, Studies in Child Welfare, vol. 3, no. 5, State University of Iowa, Iowa City, 1926.

Templin, Mildred, *Certain Language Skills in Children*, The University of Minnesota Press, Minneapolis, 1957.

Trager, George L., and Smith, Henry Lee, Jr., *An Outline of English Structure*, Battenburg Press, Norman, Oklahoma, 1949.

Watts, A. F., *The Language and Mental Development of Children*, D. C. Heath and Company, Boston, 1947.

Whitehall, Harold, *Structural Essentials of English*, Harcourt, Brace and Company, New York, 1956.

Yedinack, Jeanette G., "A Study of the Linguistic Functioning of Children with Articulation and Reading Disabilities," *Pedagogical Seminary and Journal of Genetic Psychology* 74:23-59, March, 1949.

APPENDIX

APPENDIX A

LINGUISTIC CONFERENCE AT INDIANA UNIVERSITY

In order that this project and one conducted by Walter Loban of the University of California at Berkeley might utilize a similar scheme for the analysis of children's language, a conference of linguists to be held at Indiana University, was made possible by a special grant of funds from the Cooperative Research Program of the United States Office of Education. Five linguists were invited to the conference to help refine and validate the plan devised and set forth in working papers by Mansur Ekhtiar and in papers presented by Dr. Loban. Those attending the conference were:

John Carroll, Harvard University

W. Nelson Francis, Franklin and Marshall College

David Reed, University of California

Fred Householder, Indiana University

Harold Whitehall, Indiana University

Walter Loban, University of California

Virginia Mini, University of California

Mansur Ekhtiar, Indiana University

Eldonna Evertts, Indiana University

Ruth G. Strickland, Indiana University

APPENDIX B

DESCRIPTION OF SIX DISSERTATIONS PRODUCED BY MEMBERS OF THE PROJECT TEAM

Francis, Sarah Evelyn. *An Investigation of the Oral Language of First Grade Children.* This was a study of the phonological units found in the speech of first grade children obtained in an informal, unstructured situation and its relationship to variables of chronological age, verbal intelligence, non-verbal intelligence, total intelligence, mental age, sex, occupational status, education of parents, and number of older and younger brothers and sisters.

Barnes, Margaret Davis. *An Analysis of the Oral Language of Second Grade Children with Emphasis on Patterns of Sentence Structure and Verbs.* This study was concerned with methods of describing sentence structure and patterns of verb structure to reflect varying types of complexity. It compared patterns of sentence structure and verb structure with the variables of mental age, socio-economic status, sex, and general reading age.

Shubkagle, Ruby Friese. *An Analysis of the Oral Language of Third Grade Children.* This was the first dissertation to be completed by a member of the project team. It analyzed spontaneous, non-directed conversation of third grade children and compared the language patterns with the variables of sex, intelligence, and paternal occupation. This served in a sense as a pilot study, and analysis, coding, and IBM processing of later studies were revised in the light of this first experience.

Hochstetler, Ruth Jean. *An Analysis of the Oral Language of Fifth Grade Children in Guided Situations.* The purpose of this study was to analyze the structure of the oral language of children in the fifth grade as evidenced in situations characterized by a minimum of guidance to determine what language patterns exist and to ascertain whether these patterns were quantitatively or qualitatively different. Attention was given to variables of sex, intelligence, occupational status, and educational background of parents.

Evertts, Eldonna L., *An Investigation of the Structure of Children's Oral Language Compared with Silent Reading, Oral Reading, and Listening Comprehension.* (Sixth grade). This was an investigation of the oral language of sixth grade pupils and the relationship of its structure to the silent reading comprehension, oral reading interpretation, and listening comprehension of these pupils. In addition, the language was studied in relation to the variables of chronological age, verbal intelligence, non-verbal intelligence, total intelligence, mental age, sex, occupational status, and educational background of both parents.

DeGraff, Richard A., A Comparison of the Structure of Oral Language at First, Third, and Fifth Grade Levels. This study was designed to determine the extent to which patterns existed in the syntax of children's speech as evidenced by an analysis of the free and random speech of selected children on first, third, and fifth grade levels. Comparisons were made of average length of sentence, complexity of sentence structure, distribution of slots and movables, and the use of mazes and short utterances.

APPENDIX C

SOURCES OF TESTS USED IN THE STUDY

Committee on Diagnostic Reading Tests, Inc., *Diagnostic Reading Tests, Directions for Administering*, The Committee on Diagnostic Reading Tests, Inc., New York, 1958, 8 pp.

Gates, Arthur I., *Gates Primary Reading Test*, Bureau of Publications, Teachers College, Columbia University, New York, 1958.

Kelley, Truman L., and others, *Stanford Achievement Test, Intermediate Reading Test*, World Book Company, New York, 1953, 6 pp.

Marten, Milton E., *The Relationship Between Expressed Interests and Listening Skills of Children in the Sixth Grade*, Doctor's thesis, School of Education, Indiana University, Bloomington, 1958, 158 pp., typed.

Sullivan, Elizabeth T.; Clark, Willis W.; and Tiegs, Ernest W., *California Short-Form Test of Mental Maturity, Elementary, S-Form*, California Test Bureau, Los Angeles, 1957, 10 pp.

University of Minnesota, Institute of Child Welfare, *The Minnesota Scale for Paternal Occupations*, The Institute, University of Minnesota, Minneapolis, 1950.

APPENDIX D

TRANSCRIPTION OF THE PRIMARY CORPUS OF A SIXTH-GRADE RECORDING

P Q.... Well, I don't know what you mean? Q.... Well I got one sister, P___.

(noise)

Q.... Well we've got let's see, well I've got an electric train that's about ready to fall apart. But when our neighbor comes over well, when we get busy playing with it, we don't stop. C.... Q.... Well we have it in our back room once in a while, we just set it up. Oh, well it's about 20 years old or something. Q.... Yeah I have some plastic bricks. Q.... Well I've made the depot and the station, that's about all.

J Q.... Well I have a sister, A___, she's 15 and two brothers, J___ and R___, R___ is 5 and uh J___'s, he'll be 10 July 9th I think. And he has an electric train. Oh, and in the evenings I go swimming uh classes over at the University and we were on a swimming team. And this summer uh we're going swimming at Bryan Park for practice. Q.... Well uh in the winter I've just been taking a little it while this winter. Uh, it's over at the men's pool. We practice there. And then they opened the Bryan Park pool I think May 30th. So we go over there and practice. Q.... Well free style and breast stroke, back stroke but I can't do it very well and uh oh I don't know. Q.... Well everybody's just talking about going out of school.

P Q.... Oh mainly I just go up to my uncle's or to my grandparents and that, I was going to stay. Q.... Yes. Q.... Well when I go up to my uncle's, they live in I___, so all I do is just go walking downtown. When I go up to my grandparents, let's see, in T___ and at S___, well in S___ they've got a farm so I go around there and at T___ they don't, so I just play around the back yard. Q.... Well there's uh more kind of a fossil bed all over so....

J Have you found any fossils?

P Uh-huh.

J Oh. Are they very big?

P Yes.

J Gosh.

P Some are large and some are small. Q.... Well the they're mostly round, some of them are just plain stone but well they've got little grooves around.

J Q.... Uh-huh.

P I visit with her father a lot.

J Q.... Oh, my father is a doctor, and I think he goes to him.

P Yeah.

J Q.... Well he's in I___ right now, he's studying to be an obstetrician. And uh so he'll be there three years, let's see, this June, I think it's one year he is been there. And uh he comes home pretty often, some weekends he gets home.

P Since I haven't been going to her father I've just been sick almost straight through. I think the week after her father left I got something or other and just went straight through and I missed a lot of school. C....

J What's this, oh, this one's Hansel and Gretel.

P C.... Are they hand made?

J C.... They're pretty. Q.... This is Johnny Appleseed. Q.... Well your man when he was a boy he saw this wagon train going out to California. He wanted to go with them, when he got older he, let's see, I think he just went off.

P I don't know if he had.

J Ah, did he leave, I mean run away from home? C.... Well uh he went out in the wilderness and uh from home I think he got appleseeds and he went out and planted apple trees. And then when the apple trees were harvested he got some seeds. And then uh when he was almost out of seeds, he had to go back and get some more and he got a whole canoe full of sacks of appleseeds. And he was a real kind and the animals liked him an awful lot. C....

P Q.... Yes. Well there's Betsy Ross, I guess over there. Q.... Well all I can say is she made the first flag of America with 13 stars. Q.... Well let's see, this is Tom Sawyer, I guess. Q.... Well uh there's one when he knew it was Huckleberry Finn to the graveyard, an old hun-- deserted that is, graveyard and they were they were there, they were hiding in one of the bushes and they saw these uh two men, they were digging up a grave. And in the box they dug up and they there was a man in there that was drunk. And they watched all of it. And then after so long one of them stabbed the other one and got in a fight. And then they started running back and they went to the let's see, I don't know, they went through the back of the town and when they got to Huckleberry's house, they wrote this oath and that's all I remember.

J Q.... That's little Red Ridinghood. I don't know who that is though. C.... Pilgrim. C.... I don't know who it is though. C.... Is that uh let's see...Paul?

P Abe Lincoln?

J No, Paul...

P Paul Bunyan.

J Yeah. Is that Paul Bunyan?

P Q.... The size compared to the little one.

J Yeah, that would be the uh grown-up man because he has a beard. Is this Pocahontas? C.... Gee, they're pretty. Q.... C.... Uh-huh. Q.... Uh let's see, I just started this book, "Circus Shoes." I think there's a whole series of them. It's real good. It's about a boy and a girl that uh their aunt had died and when their parents I don't know it didn't tell what happened to them. But uh they since their aunt had just died they were going to have to go to these homes for boys and girls. And they didn't want to be split up. And uh the girl, I forgot their names but the girl had to go to this home for girls and the boy had to go to another one. Uh, so they planned that since they didn't want to go away and be separated that they'd uh run away from home. And uh one night about 3 o'clock in the morning, I think it was, they ran away. They got dressed and went down the streets, uh I think it was uh in London or somewhere like that. And uh they met this uh man, oh but first they had to pawn these jewels so they could get money to go to an uncle where they wanted to stay. He was with a circus. So they met this man. He pawned the jewels for them and they got the money and they went uh to their uncle's but the man that uh got the money he said that they had to write him and send him a telegram the minute they got there. And uh they're they're at the circus now. That's about all I've read. C....

P Q.... Well it took place in London, so it says in the book. It's Peter Pan, part of it. Well it started when he was listening to uh Wendy give stories to the smaller ones. And that and uh and she had found his shadow, so she said in the story, and so while he was, later after they had gone to bed he'd come in to look for his shadow. And when he was, he pulled it out of the drawer. And it started running ahead of him, started running ahead so he went after it. And it ducked under the bed and he caught it and Wendy woke up then. And she sewed it on him, and then he said that she'd take her over to Neverland. So they went over there and then they they went over to well they landed on a cloud above uh Capt. Hook's ship and he he saw them so he started shooting at them. And Peter

Pan stayed there but he told her to go back and he told Tinker Bell who was jealous to uh go back and tell them to take to take Wendy back to the lost boys. So when they went there Tinker Bell got ahead and she told the lost boys there was a terrible Wendy bird coming and Peter wanted them to shoot it down. So they started shooting at it and then just as almost as she almost touched the ground uh Peter Peter flew in and caught her. And they asked her, he asked the lost boys uh why, who told them to shoot her down. And they said Tinker Bell did, so he said for her to vanish from the island from the island. But then Wendy said for him not to make her vanish but just stay away for a little while. So he said that she'd have to stay away for a week. And then and uh Smith told Capt. Hook that uh uh Peter had told Tinker Bell to leave the island for a week. He tried to he told Capt. Hook and Capt. Hook told Smith to go after her and find her and so he got her and came back and he had her all tied up. But Capt. Hook wanted to find out where Peter Pan's hide-out was. And well he he started to be real nice to her and all that. And then he said uh uh where, she wanted to get back at Peter Pan for doing that to her so she accidentally gave him the place where they lived. And it was Hangman's tree. And so he went he he had Smith and some of the others uh disguised as bushes and stand all around there. And he put Wendy and uh oh in a light where the candle was. And so they went over there and got the bushes and when Wendy came out to look for something, I don't know what it was, but she came out and they got her. And then the rest of the lost boys came out and they were captured too. And he was still around there. And he had and he threw in this package that said, "Do not open until midnight." and it was a time bomb. And uh Tinker Bell had heard all about this and it was almost midnight about a minute before and then she flew in and took the package and threw it and it exploded. And he asked what it was and she told him and then uh oh he went out. And they'd already taken them to the ship and they wanted to sign up and if they didn't they'd uh make them go overboard. And uh they said they wouldn't sign up. But they tried to keep them off, keep the pirates busy until Peter could come. They finally did and well the crocodile came after uh oh ....

J Capt. Hook.

P ...yeah, after he he had pushed him overboard. All the others were already in the row boat rowing away. Smith said that the Captain would have to swim for the row boat before he could uh 'cause they weren't going to come back. And so they had Peter Pan and Tinker Bell put some dust on the boat and then they uh flew over to London and let her out. And then they then well that's the end, I guess.

J C.... Do you have any hobbies?

P Uh hum.

J What are they?

P Let's see, stamps.

J Well how many do you have?

P Well that's a big question. Well approximately about 4,000.

J From how many places?

P Oh all over, the world.

J What's your favorite hobby? Stamps?

P Uh-huh, I've got others like model boats and that, planes. What are yours?

J Well I think swimming is my favorite hobby. And uh I have three medals. Uh they're for second and third.

P In swimming?

J Uh-huh.

P Have any others?

J Well, well I like to collect fish netting. Umm oh we're going to F___ this year to B___, it's by D___, I think.

P Is your father going with you?

J Yeah, he has two weeks vacation and uh the cottages there look exactly like houses. They have about four bedrooms and uh...

P Cottage?

J Uh-huh, dish washers and uh clothes washers and clothes dryers and linens.

P Do they have things like dining rooms or something like that?

J Well let's see, a dining room and a kitchen...

P In the living room, combined?

J The living room is one. It's bigger than this I think. And they have a dining room and kitchen and those are together and the dining room things are in the kitchen and also have refrigerators. It's got everything.

P Dishwashers? They don't supply the food do they if you pay?

J No, they supply the uh blankets and pillows and dishes and everything.

P Have any others?

J Uh let's see ...

P Things you do? Where did you go on your last vacation then?

J Oh we went to the Dunes. Oh that's a lot of fun. It is a beach by Lake Michigan and it has a Pavilion. Oh it's a great big beach. And oh when they when it's just after a rain, there are great big white breakers. And you go out there you can't get under water and be drawn out into, farther out. It's a real strong current underneath the water. It's so much fun to play in though.

P It sounds like Lake Michigan. Well I uh let's see I also collect coins.

J Do you have lots of those?

P Not very many. I'm just starting. I've got two, I think, no, I've got four at present. I got uh let's see, Greece, one's from Greece, one's 50¢, the one's I showed in class those two, and I've got two Canadian pennies.

J Have you ever been to Canada?

P Huh-uh.

J Oh, it's just wonderful.

P I haven't been any farther than, I just been, I haven't been oh about a mile into Illinois that's the only place I've been, to a restaurant. Have you ever lived any other places, besides just here?

J Well let's see, my parents uh when my sister, A___, was born nobody else was born, not even me, uh they lived in G___ a couple of years, that's when my father was in the Army and ...

P Was he an Army doctor?

J Uh-huh, till he came to I___, Indiana, and I was born in I___. Then uh R___, J___, let's see. I don't know where J___ was born, he was born in B___, so was R___. And uh the stores in Canada, uh we went there and they have all Scottish dolls and uh ...

P Do they mostly in their pet stores sell uh Scottish dogs, terriers?

J Oh, a live dog, I don't know. I just saw dolls.

P Did they have little miniatures of dogs too?

J Uhh, I suppose so, yeah.

APPENDIX E

TWENTY-FIVE SELECTED SENTENCES ANALYZED AT LEVEL I

1. C.... I don't know who it is though.
1 2 4 M$_2$

2. C.... Is that [uh let's see]...Paul?
2b 1 5

3. [No], Paul...
U/1

4. Yeah.
U

5. Is that Paul Bunyan?
2b 1 5

6. Yeah, that would be the [uh] grown-up man because he has a beard.
U 1 2b 5 M$_4$

7. Is this Pocahontas?
2b 1 5

8. C.... [Gee], they're pretty.
1 2b 5

9. Q.... C.... Unhuh.
U

10. Q.... [Uh let's see], I just started this book, "Circus Shoes."
1 M$_2$ 2 4

11. I think there's a whole series of them.
1 2 4

12. It's real good.
1 2b 5

13. It's about a boy and a girl that [uh] their aunt had died and
1 2b 5 +

[when their parents] I don't know it didn't tell what happened
1 2 1 2 4

to them.
(4)

14. [But uh they] since their aunt had just died they were going to
M_4 1 2
have to go to these homes for boys and girls.
M_1

15. [And] they didn't want to be split up.
1 2 4

16. [And uh the girl], I forgot their names but the girl had to go
1 2 4 + 1 2
to this home for girls and the boy had to go to another one.
M_1 + 1 2 M_1

17. [Uh], so they planned that since they didn't want to go away and
1 2 4
be separated that they'd uh run away from home.
(4)

18. [And uh] one night about 3 o'clock in the morning, [I think it
M_3
was], they ran away.
1 2

19. They got dressed and went down the streets, [uh] I think it was
1 2 M_1 1 2 4
[uh] in London or somewhere like that.
M_1

20. [And uh] they met this [uh] man, [oh] but first they had to pawn
1 2 4 + M_3 1 2
these jewels so they could get money to go to an uncle where
4 M_4
they wanted to stay.
(M_4)

21. He was with a circus.
1 2b 5

22. So they met this man.
~~+~~ 1 2 4

23. He pawned the jewels for them and they got the money and they
1 2 4 M_5 + 1 2 4 + 1
went [uh] to their uncle's but the man that [uh] got the money
2 M_1 + 1

[he] said that they had to write him and send him a telegram
2 4
the minute they got there.
(4)

24. [And uh they're]they're at the circus now.
1 2b M_1 M_3

25. That's about all I've read.
1 2b 5

APPENDIX F

TWENTY-FIVE SELECTED SENTENCES ANALYZED AT LEVEL II

1. C.... I don't know who it is though.
v(sg) nv ss

2. C.... Is that uh let's see...Paul?

3. No, Paul...

4. Yeah.

5. Is that Paul Bunyan?

6. Yeah, that would be the uh grown-up man because he has a beard.
v(sg) nv sg ssv_4

7. Is this Pocahontas?

8. C.... Gee, they're pretty.

9. Q.... C.... Uh-huh.

10. Q.... Uh let's see, I just started this book, "Circus Shoes."
sg

11. I think there's a whole series of them.
ss

12. It's real good.
sg

13. It's about a boy and a girl that uh their aunt had died and when
ss
their parents I don't know it didn't tell what happened to
v(sg) nv v(sg) nv ss
them.

14. But uh they since their aunt had just died they were going to
ssv_4 v(sg)
have to go to these homes for boys and girls.
nv sgv_1

15. And they didn't want to be split up.
v(sg) nv sg

16. And uh the girl, I forgot their names but the girl had to go
sg (sg) n v(sg) nv

to this home for girls and the boy had to go to another one.
sgv_1 (sg) n v(sg) nv sgv_1

17. Uh, so they planned that since they didn't want to go away and
ss

be separated that they'd uh run away from home.

18. And uh one night about 3 o'clock in the morning, I think it was,
sgv_3

they ran away.
nv v(sg)

19. They got dressed and went down the streets, uh I think it was uh
v(sg) nv nv sgv_1 ss

in London or somewhere like that.
sgv_1 sgv_1

20. And uh they met this uh man, oh but first they had to pawn
sg v(sg) nv

these jewels so they could get money to go to an uncle
sg ss

where they wanted to stay.
ss

21. He was with a circus.
sg

22. So they met this man.
sg

23. He pawned the jewels for them and they got the money and they
sg sgv_5 sg

went uh to their uncle's but the man that uh got the money he
sgv_1 ss

said that they had to write him and send him a telegram the
ss ss

minute they got there.

24. And uh they're they're at the circus now.
sgv_1

25. That's about all I've read.
ss

APPENDIX G

READING TEXTBOOKS SELECTED FOR ANALYSIS

ALLYN AND BACON, INC.

Sheldon, W. D.; Mills, Q. B.; Austin, M. C.; McCracken, R. A.; and others

Sheldon Basic Reading Series

At Home, Preprimer 1
Here and Near, Preprimer 2
Here and Away, Preprimer 3
At Home and Away, Senior Preprimer
Our School, Primer

Our Town, First Reader
Fields and Fences, Grade 2, Book 1
Town and Country, Grade 2, Book 2
Magic Windows, Grade 3, Book 1
Story Caravan, Grade 3, Book 2

Believe and Make-believe, Grade 4
Finding the Way, Grade 5
Arrivals and Departures, Grade 6

GINN AND CO.

Russell, David H., and others

Ginn Basic Readers

My Little Red Story Book, Preprimer
My Little Green Story Book, Preprimer
My Little Blue Story Book, Preprimer
Little White House, Primer
On Cherry Street, First Reader

We Are Neighbors, Second Reader I
Around the Corner, Second Reader II
Finding New Neighbors, Third Reader I
Friends Far and Near, Third Reader II
Roads to Everywhere, Fourth Reader

Trails to Treasure, Fifth Reader
Wings to Adventure, Sixth Reader

LYONS AND CARNAHAN

Bond, Guy L.; Dorsey, Grace A.; Cuddy, Marie C.; and Wise, Kathleen

The Developmental Reading Series

Three of Us, First Level Preprimer
See Us Come, First Level Companion Preprimer
Play with Us, Second Level Companion Preprimer
Fun with Us, Third Level Preprimer
See Us Play, Second Level Companion Preprimer

See Us Have Fun, Third Level Companion Preprimer
Ride with Us, Fourth Level Preprimer
See Us Ride, Fourth Level Companion Preprimer
Many Surprises, Primer
Happy Times, First Reader

Down Our Way, Second Reader, Level 1
Classmate Simplified Edition
Just for Fun, Second Reader, Level 2
Classmate Simplified Edition

Stories from Everywhere, Third Reader, Level 1
Classmate Simplified Edition (Level 1)
Classmate Simplified Edition (Level 2)
Meeting New Friends, Fourth Reader
Classmate Simplified Edition

Days of Adventure, Fifth Reader
Classmate Simplified Edition
Stories to Remember, Sixth Reader
Classmate Simplified Edition

SCOTT, FORESMAN AND CO.

Gray, W. S.; Monroe, M.; Artley, A. S.; and Arbuthnot, M. H.

The New Basic Readers

New We Look and See, First Preprimer
New We Work and Play, Second Preprimer
New We Come and Go, Third Preprimer
New Fun with Dick and Jane, Book I-I
New Our New Friends, Book I

New Friends and Neighbors, Book II-I
New More Friends and Neighbors, Book II-II
New Streets and Roads, Book III-I
New More Streets and Roads, Book III-II
New Times and Places, Book IV-I

More Times and Places, Book IV-II
New Days and Deeds, Book V-I
More Days and Deeds, Book V-II
New People and Progress, Book VI-I
More People and Progress, Book VI-II

BULLETINS IN THE FIELD OF EDUCATION
INDIANA UNIVERSITY

The *Bulletin of the School of Education*, Indiana University, was first published in 1924 and has appeared regularly since that time. A complete list of bulletins may be obtained from the School of Education upon request. The studies included in the present volume and in the two volumes immediately preceding it in date are listed below. Unless otherwise indicated, these may be obtained for $1.25 each from the Indiana University Bookstore, Bloomington, Indiana.

Volume 36 (1960)

1. Clayton, A. Stafford, editor, *John Dewey in Perspective*, 44 pp.
2. Klinge, Paul E., *A University Summer Program for Gifted Science Students*, 54 pp.
3. Turner, Richard L., and Fattu, Nicholas A., *Skill in Teaching: A Reappraisal of the Concepts and Strategies in Teacher Effectiveness Research*, 40 pp.
4. Welch, Ronald C., *Promising Practices in Elementary School Mathematics*, 54 pp.
5. Strom, Ingrid M., *Research in Grammar and Usage and Its Implications for Teaching Writing*, 23 pp.
6. Bern, Henry A., editor, *New Directions in Audio-Visual Communications*, 83 pp.

Volume 37 (1961)

1. Voorhies, William T., *Television in Education, with Emphasis on Its Use at Indiana University*, 46 pp.
2. Clayton, A. Stafford, editor, *Problems of Educational Freedom*, 32 pp.
3. Turner, Richard L., and Fattu, Nicholas A., *Skill in Teaching, Assessed on the Criterion of Problem Solving*, 32 pp.

4. Long, Nicholas J., and Newman, Ruth G., *The Teacher's Handling of Children in Conflict*, 64 pp.

5. Stoneking, Lewis W., and Welch, Ronald C., *Teachers' and Students' Understanding of Arithmetic*, 58 pp.

6. Lynch, William W., Jr., *Person Perception: Its Role in Teaching*, 45 pp.

Volume 38 (1962)

1. Massialas, Byron G., *Research Prospects in the Social Studies*, 48 pp.

2. Manlove, Donald C.; Hughes, Otto; and Franzén, Carl G. F., *The 1960 Evaluative Criteria and Indiana Secondary Schools*, 83 pp.

3. Neteland, Edward, and Stoner, Lee H., *Teacher Education in Pakistan*, 59 pp.

4. Strickland, Ruth G., *The Language of Elementary School Children: Its Relationship to the Language of Reading Textbooks and the Quality of Reading of Selected Children*, 131 pp.